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HISTORY
OF THE
BERWICKSHIRE
NATURALISTS' CLUB.

INSTITUTED SEPTEMBER 23, 1831,

"MARE ET TELLUS, ET, QUOD TEGIT OMNIA, CÆLUM."

1863—1868.



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PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered at Belford, on the 24th of September, 1863.

By JOHN TURNBULL, Esq., of Abbey St. Bathans, President.

GENTLEMEN,

On looking over the part of our transactions for 1837, which has been reprinted by the Duke of Northumberland, I observe that the President of that year, (the late amiable and accomplished Mr Baird of Yetholm,) stated it as an interesting feature of our club, that we had continued "after an existence of six long years to meet with the same zeal and with the same anticipations of enjoyment as we did at our first formation, when our society possessed all the interest of novelty." How much more forcibly may I now congratulate you on our continued prosperity and success—on the harmony of our meetings—on the pleasure and instruction derived from them—on the healthful change of occupation a day with the club affords to many of us—and on the additions we have made to the records of the Flora and Fauna of the dis-

strict, to natural history itself, and to the ancient history of our country. Our success during the last year has not been less than that in any of its predecessors. We have received a large accession of new members ; and were I to express any suggestion for our future guidance, it would be, that we should well consider the judiciousness of unlimitedly increasing our numbers. It seems to me to be more consonant with the original intention, and more conducive to the future interests of the club, that it should consist rather of a few ardent lovers and keen observers of nature, than of a mixed multitude having no special object in view, and no particular pursuit to follow at our field meetings.

Our meetings during the year have, with one exception, been numerously attended, and the localities explored have been of great interest.

The last anniversary meeting took place at Berwick on the 25th September, 1862, when there were present :—Messrs D. Milne Home, Robert Home, Jas. Patterson, Robt. Douglas, Geo. Tate, Stephen Sanderson, John Tait, James Tait, Captain M'Laren, Revds. F. R. Simpson, Peter Mearns, E. A. Wilkinson, Drs. Brown and Allan ; and as visitors, Dr. Clarke and Mr Wm. Darnell.

The day being inclement no regular out-door exploration was attempted ; and the time was spent chiefly in the examination of accounts, which were passed, in the arrangement of business, in listening to the president's address and other papers, and in discussing the questions raised by these communications. The address of the president was listened to with interest ; and afterwards John Turnbull, Esq., of Abbey St. Bathans, was elected president for the ensuing year.

A paper was read from Mr Cunningham, on Terraces on the Kale Water ; and another, by the Rev. P. Mearns, on a Gravel ridge at Wark.

It was resolved, that Sir Wm. Jardine, Bart., be requested to represent the club at the meeting of the British Association at Cambridge, to press the claims of Newcastle as the place of meeting for next year.

It was also agreed to, after due deliberation, that the expenses incurred at the respective meetings of the club for breakfast and dinner, the latter including ale and spirits, be paid according to the old usage, in equal shares by the members attending the meeting, after deducting from the bill the authorised contribution from the club funds; but that any member may order wine for himself provided he pay for the same.

The places of meeting of the ensuing year were appointed to be at

Newtown St. Boswell's		on Thursday, 28th May.
Longhoughton for the Howick coast	„	25th June.
Cornhill for Wark	„	30th July.
Warkworth	„	27th Aug.
Belford	„	24th Sep.

The following gentlemen who had been proposed at the last meeting were elected members:—Mr David Ferguson, Dunse; Mr James Wood, Wellfield House, Dunse; John Tait, M.D., Dunse, and James Falla, M.D., Jedburgh; and two candidates for membership were proposed.

The first field meeting of this year was held at St. Boswell's Newtown, on the 28th May, when the following members were present:—The President, Messrs R. Embleton, Geo. Tate, Robt. Home, Robt. Douglas, J. Scott Dudgeon, Wm. Boyd, Arch. Jerdon, A. Jeffrey, John Hilson, J. A. Murray, M. Culley, Wm. Stevenson, Henry R. Hardie, Patrick Dickson, Thomas Friar, James Tait, Sir Geo. Douglas, Bart., Rev. J. C. Bruce, LL.D., Drs. Chas. Douglas, Robson Scott, James Falla, Revds. P. Mearns, Jas. Dand, John Walker; and as visitors, Messrs Carr of Hedgely, Carr of Newtown, Curle of Melrose, Wade and Currie of Darnick, Dand of Field House, Dickson of Hawick, Elliot of Wolflee, Revds. Mr Murray of Melrose, Lungnarr of Newtown, and Dr Davison.

The hotel in which the club breakfasted is close by the railway station, and stands on the line of Watling Street,

which for a considerable distance runs nearly along the present road from Newstead southwards.

Immediately after breakfast the members divided into two parties—one proceeding to Dryburgh, and a second going to the Eildons to examine the botany and geology of the hills.

I am informed that little of interest was discovered by the botanists and entomologists. The only beetle captured was the *Chrysomela polita*; and among the plants deserving of mention was the *Allosorus crispus*, or Parsley fern, growing in great abundance on the south side of the eastmost of the Eildons among the “Glidders.” A pretty blue variety of the *Viola lutea* was found on the top of the same hill, and the *Symphytum tuberosum* as well as *S. officinale* were also gathered.

Mr Tate has kindly furnished the following :—

Notes on the Geology of the Eildon Hills.

“ Mr Embleton and myself, along with Mr Fryar set off, immediately after breakfast, to the Eildon hills, to examine their botany and geology. We first ascended the highest or middle peak, and then crossed the Col to the northern hill, where we were joined by Mr Stevenson and by Mr Curle, to whom we were indebted for much local information. We afterwards descended the hill on the western side. Eildon with its remarkable three peaks is but one hill; and the whole is essentially of the same geological character. It is a protrusion of porphyry through the greywacke or Cambrosilurian strata, which wrap round the lower parts of the hill. We had an opportunity of examining these strata on the western side of the middle hill, where at a height of about 760 feet above the sea, they are highly inclined, being almost perpendicular, and having nearly the usual direction of this formation in the south of Scotland, from south-east to north-west. In one part they are cut through by a porphyritic dike, which has so dislocated the strata, that on the north side they are perpendicular, but on the south side dip towards the dike.

“ All the peaks are porphyry; on the summit of the middle peak, it is of a dark dull red colour, having a few felspar crystals scattered through a felspathic base; lower down, it is a light red compact felspar. In the northern peak, the porphyry is of the common character, a red or greenish felspathic base with felspar crystals; but, according to Mr D. Milne Home, clinkstone, containing embedded greywacke, occurs in the southern peak; and opposite Bowden it is in pentangular columns. These however we had not time to visit.

“ Near to Melrose, in St. Mary’s glen, which has been hollowed out by a little burn, there is a peculiar sandstone, of which we saw about 30 feet in thickness. It is soft and friable; the beds are flat, dipping very slightly W.S.W.; but no fossils could be detected, and therefore its relative age cannot be determined with certainty. It has, however, the aspect of the old red sandstone, being of a deep red colour, and resembling much some sandstone beds on the Whiteadder above Preston bridge, which are of undoubted Devonian age. A trap tufa dike cuts through this sandstone in St. Mary’s glen, indurating the beds on the west side, while those on the east appear unaltered.

“ A short distance southward of Melrose, a remarkable rock is quarried for a building stone. Seen in the mass it has the appearance of a fire formed rock, being devoid of stratification, and irregularly divided by joints. It is composed of fragments of porphyry and greywacke, some being angular and others rounded, firmly united in a felspathic base. Properly speaking it is a Breccia; and it is evidently of later age than the porphyry, and later too than the red sandstone, for the dike which cuts through this sandstone in St. Mary’s glen is of a similar character. Probably it may have originated in an eruption of mud, which enveloped fragments of porphyry and greywacke, and which, though sufficiently heated to alter the sandstone, was not so intensely heated, as to fuse the fragments and form them into a new crystalline rock. The porphyry of the Eildon is similar to that of the

Cheviots, and both are associated with greywacke and red sandstone, and both had been protruded subsequently to the deposition of the Cambro-silurian formation, for these beds are highly inclined around the porphyry hills.

“There has been so much discussion respecting terraces in the Eildons, that we could not help directing attention to the evidences of the action of water on these hills. The boulder clay of the glacial era we found on the north side of the hills, at a level of about 600 feet above the sea. Here a knoll was pointed out, called Burg-jo, which from its name has been supposed to be a work of art, either as a barrow or fortified place. We could however detect neither ramparts nor ditches nor artificially arranged stones to favour the notion. A rivulet of water here comes down from the hills, and this when flooded, acting with great force, has hollowed out a little valley, and cut off this knoll from the mass of the hill. Above the boulder clay there is no distinct evidence of water levels or sea-beaches. The great platform on the eastern side of the northern hill has been considered a water level; but this opinion is more than doubtful, for there is no corresponding level on the other hills, while the superficial covering presents no rolled blocks nor rounded pebbles, such as would have been left by the action of the sea or fresh water. All the fragments of rock in the subsoil are angular, and in the same state as those which have been detached from the exposed rock, by the ordinary action of the elements under sub-aërial conditions. Other slighter shelves in the hills have also been regarded as water levels; but under none of them are there rolled stones; nor are they level for any distance, or parallel with each other. They seem to be natural breaks in the rock, trimmed a little, it may be in some cases, by human art. They differ however materially from a different class of terraces among the Cheviots, which are wider, smoother, more regular in shape, and which were most probably terraces of cultivation. I saw no evidence of sea or lake above the level of the boulder deposit.”

The party which followed the programme prepared for the

meeting, proceeded through the village and down a deep glen hollowed out by the streamlet, which, further up, forms the Vale of Hollyden and Bowden. It was stated that this glen is deepening at the rate of a foot in ten years, and if this rate could be assumed to have been constant, it would not be difficult to estimate the period required for making this deep groove in the boulder clay. Crossing the Tweed by the abbey boat, and passing the ancient quarry from which Melrose Abbey is said to have been built, the members reached Dryburgh. It would be out of place for me here to describe again these ruins, which have so often formed a theme for the historian, the poet, and the architect; or to review the rival claims of de Morville and David I. for the honour of the abbey's foundation. Suffice it to say, that the members viewed with due reverence those grey walls and broken arches, as well as the modern sarcophagus which covers the remains of Scott.

From Dryburgh the party recrossed the river, and after a hot walk reached the church of St. Boswell's to examine some sculptured stones said to exist there. Against the south wall there stands a stone on which a cross can clearly be discovered, and some of the more imaginative members thought they could read the words "Gloria Deo." On several of the corners of the church and porch are grotesque heads, probably part of an older building. The party then retraced their steps towards the Eildon hills, pursuing the line of Watling Street to Eildon, thence turning up the hill to a point, where General Roy found Roman remains, which led him to place here the station of Trimontium. It seems more probable, however, that this important station was situated at Newstead. The extraordinary camp on the southern slope of the eastern hill was then visited. It is kidney shaped, being accommodated to the ground on which it is situated. It is formed by what may be called a "face dyke," the perpendicular stone dyke being outwards and the slope of earth inwards. At its eastern end is a spring, and a roadway can be traced from the same end down towards Eildon. This camp

has given rise to much discussion, its date being fixed by different antiquaries in the Ancient British or pre-Roman period—in the Roman and in the later Northumbrian. Dr. Bruce of Newcastle, who was present at this meeting, and than whom there is no greater authority on everything connected with the Roman occupation of Britain, was of opinion that if it were then in existence it might occasionally have been used by the Romans as an outpost or outlook for Trimontium, but that it is not itself of Roman origin. From this camp the party ascended to the top of the hill, examining in their way the several terraces which surround it, some of the members maintaining their artificial and others their natural origin. In like manner the shallow spots or hollows on the top of the hill were by one party maintained to be the bases of Ancient British dwellings, while the other party could discover nothing artificial in their appearance. It is only by excavation that these knotty points will be determined. A steep descent brought the club to Newstead, where, during the railway works and since that time, many Roman remains have been found, consisting of altars, coins, foundations, &c. On the opposite side of the Tweed a green lane still marks Watling Street, shewing where it had crossed the river. In the old statistical account of Melrose it is stated, “At this place there has been a famous bridge over the Tweed. The entrance to it on the south side is very evident, and a great deal of fine stones are dug out of the arches of the bridge when the water is low. When the ground here is ploughed or ditched, the foundations of several houses are discovered, a great deal of lead got, and some curious seals.” If these were the remains of a Roman bridge, all trace of it has now disappeared; but the expression “arches of the bridge when the water is low,” would rather lead to the supposition, that here was only a paved ford, somewhat in the shape of an inverted arch, the stones being clamped with iron embedded in lead. Such paved fords of Roman construction are not uncommon. In connection with this subject Mr Currie of Darnick exhibited, after dinner, a mass of oxidised lead found

lately in draining near this spot, along with a quantity of ancient pottery.

Mr Curle directed the attention of the club to another object of great interest to philosophers, which had been found at Newstead. In the year 1827, when foundations were being dug for a new cottage, a large rounded lobed mass of black-looking heavy stone was discovered at the depth of three or four feet from the surface sticking in the clay; being peculiar in appearance it was preserved as a curiosity, but its nature was not known till 1861, when the mass attracted the notice of Dr Alexander Smith of Edinburgh, who carefully examined it and had portions analysed. It proved to be meteoric iron, magnetic, and containing of iron 93·51, of nickel 4·86, of silica, 0·91, and of carbon 0·59. Such meteorites are very rare in Britain, only one other having been noticed; this is the largest, weighing 32 lbs 11 oz. 1½ drachms avoirdupois. At some distant period it had fallen from the heavens, and from the great force with which it fell it had been buried some depth in the earth. An account of it has been printed in the Edinburgh New Philosophical Journal for July 1862.

From Newstead a sharp walk of a couple of miles brought us to Melrose in time for dinner, which was earlier than usual in consequence of the hours of the evening trains.

After dinner Dr Bruce made some remarks on Newstead, and a discussion took place regarding the camp on the south side of the hill which had been examined in the forenoon. Mr Tate exhibited and read an account of a fossil Sea star from the sandstone of Shilbottle, being the only specimen of the kind which has been discovered in the mountain limestone formation. Mr Curle of Melrose exhibited specimens of the Torbanehill mineral, which contained *Stigmara ficoides* with rootlets attached; and this fossil being a plant peculiar to the carboniferous formation, and occurring abundantly in the clays below coal seams, furnishes a strong argument for holding, that this so called Torbanehill mineral is in reality a coal. Mr Curle also exhibited what had much the appear-

ance of part of the trunk of a fossil tree—many similar specimens being found in his old red sandstone quarry at Morriston. Its claims however to an organic origin were warmly disputed. Mr Walker of Greenlaw stated that specimens of a like kind were found in a quarry in his parish, and after being submitted to eminent geologists, they were determined to be simply concretions. Mr Jerdon laid before the meeting a paper containing a list of the Fungi in the neighbourhood of Jedburgh. The president exhibited specimens of flint implements found in ancient cavern quarries in the Sinaitic peninsula, and which he had brought home some months ago. They were of interest as showing the tendency of the human mind to develope itself in the same material forms, in the same stage of civilization, in the most distant countries ; for these weapons though ruder than those found in this district, are of the same shape, but better formed than those found in the drift. A few members, whom the southward trains did not hurry away, lingered awhile in the cool of the evening among the lovely ruins of the abbey ; but they too at last departed, made better, wiser, and happier for this day spent among the beauties of nature, and in the discussion of the ancient history and state of the district.

At this meeting it was resolved that the next meeting should be held at Warkworth instead of Longhoughton, reserving Longhoughton for the August meeting, as the British Association is to meet in that month at Newcastle, and will probably visit the Howick coast, a visit in which this club may not inappropriately become their guide.*

The following gentlemen, proposed at the last meeting, were elected members :—Mr James Cunningham, Coldstream, and the Rev. Mark Pattison, Rector of Lincoln College, Oxford. Seventeen candidates for membership were proposed and seconded.

The next meeting was held at Warkworth, on the 25th

* It was also resolved that every new member shall, on his admission into the club, pay the subscription of the current year, and that he shall receive one copy of the proceedings of that year.

June, when there assembled :—The president ; Messrs J. C. Langlands, J. Brack Boyd, Robert Douglas, Robert Graham, John Tate, Wm. Boyd, M. Dand, Fairfax Fearnley, William Dickson, jun., F. W. Collingwood, Patrick Dickson, Thomas Robertson, Geo. Tate, Revds. J. W. Dunn, F. R. Simpson, P. Mearns, Geo. Walker, Geo. Rooke, Robert Green, Robert Henniker, Wm. Darnell, W. Cooley, Henry Parker, J. A. Wilkinson, Drs. Francis Douglas, Chas. Douglas, Wilson, W. Mackenzie ; and as visitors, Dr. Dawson, Messrs. T. Archer, Jerdan, W. Darnell, Henniker, and Chas. Parker.

After breakfast the Rev. Mr Dunn of Warkworth read an interesting paper on Warkworth and its Castle, and which, by giving the members some previous knowledge of the subject, greatly enhanced the pleasure and interest of their forenoon's ramble.

Mr Dunn's paper being finished, the club, under his guidance, visited the castle, and explored with interest the vaults and dungeons, the chapel, and various apartments of the mighty pile. After above an hour spent here, the party proceeded up the river, and crossing it, visited the Hermitage, examining in the way the cliffs of Millstone Grit, in some parts of which are found particles of magnetic iron ore. The well was dry and dirty,—having lost its fulness and its virtue since draining was carried on in the lands above. There was also remarked the Flood mark of 9th February 1837, at a height above the present smooth surface of the stream quite marvellous. The Hermitage was explained also by Mr Dunn, but some of the more incredulous members declared they could discern no bull's head in the unshapen excrescence left on the window sill. This, however, as well as other points connected with the hermitage and castle, are fully discussed in Mr Dunn's paper.

Recrossing the river the party separated—some of the members retracing their steps towards Warkworth for the purpose of examining the botany and entomology of the river between the town and the sea, while the rest, through waving fields, across a breezy common and along a slowly

lane, sought the haugh on the river side, whereon stands the remains of the church of Guyzance or Brainshaugh, as it is now generally called. Mr Longstaffe thus describes the ruin:—

“From the level sward of a large haugh among the intricate winds of the Coquet, between Felton and Warkworth, rises a small but interesting ruin. It adds a charm to the pleasant amphitheatre of which it forms a centre, and is a striking feature of the scene from every point of view. A little west is the residence called Brainshaugh. The ruin consists of a nave and chancel, the eastern wall of which has entirely disappeared. The general character of the building is transitional Norman, of which style a striking example remains in a capital adorned with numerous vertical strings of the nail-head ornament. This fragment, which perhaps adorned the destroyed chancel arch, forms the headstone of a grave, (for the consecrated earth has not been wholly secularised,) and another piece of stone moulded with a succession of right angles like steps, lies near it. The nave is very short in proportion to the choir, and has perhaps been used for domestic purposes. The north doorway of the choir is pointed exteriorly and is square within; but above the lintel stone of the square arises a semicircular blank arch. The south wall has arrangements of the decorated period. There is a chamfered doorway and a piscina of two or three basins. Between these objects is a wide opening in the wall at a height of about a couple of stones from the ground, with bold converse mouldings of a quarter circle. There is a kind of socket at the base of this opening, as if a screen or door had moved in a vertical manner. To the southward of the opening are indications of domestic apartments. The ruins are walled round and every care is taken to preserve them. Here is the site of the church of St. Wilfrid of Gysnes, which Richard Tison gave to the canons of Alnwick in the 12th century.

* * * Judging from the early mention of the church in the Halgh, it is very probable that we really have the relics of an obsolete parish. I am told that burials are performed among the ruins by the incumbents of any of the

three surrounding parishes of Felton, Shilbottle, and Warkworth without reference to jurisdiction, and that the chapel is known as that of Brainshaugh rather than that of Guyzance. * * * The ground at Guyzance is broken and uncultivated, and altogether very wildly beautiful. The mill is still an interesting object, and near it is a ferry over which a pretty Northumbrian maiden steers the fortunate passenger." Except the single capital mentioned by Mr Longstaffe, and which is of late Norman, the members could discern no indication in the ruin of the Norman or transitional Norman character. The piscina is decorated and has probably had three basins, though it is so much broken as to render this doubtful. The nave and chancel are both about 30 feet long by 16 or 17 broad ; and at the west end a tombstone, showing the lower part of a cross carved on it, has been built into the window, thus indicating this part of the wall not to be very ancient. Mr Dunn mentioned, that until a recent period service used occasionally to be performed in the open air, underneath one of the trees near the river, on Sunday evenings. After lingering as long as time permitted in this charming spot, and in the hope it may be (doomed however to be disappointed,) of meeting Mr Longstaffe's Northumbrian maiden, the party returned to Warkworth, when at 3 o'clock the scattered members became reunited in the church, which, under the personal and constant superintendence of Mr Dunn, has lately undergone a most judicious restoration.

Among the plants reported to have been gathered between Warkworth and Amble were *Glauz maritima*, *Diplotaxis tenuifolia*, *Melilotus officinalis*, *Honckenya peploides*, *Malva moschata*, *Cakili maritima*.

After dinner a conversation took place on the impossibility of completing full sets of the transactions of the club ; and it was resolved that the members at the annual meeting at Bedford consider the propriety of reprinting a certain number of the earlier parts.

A paper by Dr Embleton was read on the sand grouse, a native of Syria and adjoining countries, which however has

lately appeared in considerable numbers in different parts of this country. Specimens shot a few days ago at Ross sands were exhibited by Mr Walker. Is it not a pity that these and other rare visitants should be persecuted even to extermination? for though the sand grouse has not bred in captivity in this country, it would be interesting to ascertain whether they would not live and breed in a state of freedom.

A paper on Entomostraca found in the mountain limestone formation of the Berwickshire coast, by Mr Geo. Tate, was read, with descriptions by Professor Jones, F.G.S.; and Mr Mearns read part of a paper on Wark, which is to be the scene of our next field meeting.

A letter from Mr Doubleday, of the Mining Engineers' Association, Newcastle, to the secretary, was read, containing the programme of an excursion for the British Association, and requesting the assistance of the club in carrying it out. It seemed to the members present that the excursion was much too extensive to be overtaken in one day, and it was remitted to the secretaries to act in the matter as they should see best.

Mr Tate exhibited a copy of a monograph by J. Farrer, M.P., on Maeshow in Orkney,—and gave a short account of the discovery of Runic inscriptions in this chambered tumulus.

The third meeting was held at Cornhill, on the 30th July, the party assembling to breakfast at Wark Boat-house. There were present:—The president; Mr Embleton, secretary; Messrs. D. Milne Home, Brack Boyd, Arch. Jerdon, W. Elliot, J. A. Wade, J. Tait, J. C. Langlands, Wm. Stevenson, Wm. Cunningham, Jas. Cunningham, R. Home, F. W. Collingwood, Wm. Boyd, J. Paxton, T. Y. Greet, C. Watson, Jas. Grey, C. Rea, Jas. Patterson, T. Friar, Revds. J. Jarvie, P. Mearns, W. Lamb, John Walker, J. Milne, J. Pat-
tinson, Rector of Lincoln College, R. Jones, Wm. Darnell, J. C. Bruce, LL.D., J. Irwin, F. R. Simpson, Capt. M'Laren, Drs. Charles Douglas, Turnbull, Brown, and Hood; and as visitors, Mr E. Carr and Mr Laing.

After breakfast Mr Mearns read another part of his paper on Wark (the first part having been read at the last meet-

ing,) and he and Mr D. Milne Home explained the formation of the Kaim on which the castle stood, illustrating their remarks by diagrams.

Mr D. Milne Home exhibited a manufactured flint, which had been found near this spot some two or three years ago by Mr Fulton, of Coldstream, while digging out rabbits. It was found in a bed of sand and gravel, and at a depth of 10 or 12 feet from the surface. It was apparently a part of a rude spear head.

Mr Stevenson of Dunse gave an account of a cist which had been found on the farm of Grueldykes, near Dunse, during the railway operations. It contained a complete skeleton, with parts of a broken urn; the skull and some other bones, and the fragments of the urn were exhibited.

The following members, proposed at last meeting, were admitted:—Rev. Edward Mangin, Rector of Howick; Rev. Edward Merrett, Vicar of Lesbury; Mr Thomas Clutterbuck, Warkworth, and Mr Thomas Tate, Bilton, Alnwick; and six new candidates were proposed.

Leaving the Boat-house the members assembled in a group, and were photographed by the boatman. The photograph is a very successful one, and will form an interesting illustration to be bound up with the minutes of this meeting.

Under the guidance of Mr Mearns the remains of the castle were explored; but some of the members looked with suspicion on the drain or sewer, by which the English are supposed by Mr Mearns to have got admission to the castle in 1419, seeing that it would only admit a man of very small proportions. The Lady's walk is still a fine terrace, and the mound which marks the site of the donjon tower commands a noble view. It is singular that almost no dressed or sculptured stones remain; only one was observed, and it was used as a water-trough for poultry at a cottage door. The escarpment at the schoolhouse was examined, and also the quarry in the Kaim, in both of which the nature of the stratification is clearly discernible.

The party then separated, one section going to Learmouth

bog to explore its botany. The other went westwards, following the Kaim till it run into the general level of the country, and examining the Gilies nick which cuts through it leading to an old church-yard. Thence across the Galahill, where in days of old many a Scotchman met an untimely fate, and from whence could be seen the Gallowslaw above Coldstream, where the same severe justice was executed on the English. Onwards to Shidlaw. On the top of the wooded rocky knoll behind the farm-house is a tumulus, which had evidently been explored at no distant date by being cut into from one side, but no information could be got as to the result. It is desirable that any discovery made in it should be recorded in our transactions. Limestone was worked experimentally near this spot, but it is believed not to have been of such a quality as to render the quarry successful. The next point of interest was the railway cutting to the west of Carham station, where the chert limestone is exposed—a rock which is found only in this district and in small quantity near Dunse. It is a calcareous sandstone converted into chert by heat. Returning eastwards along the line of railway, the junction of this chert with the basalt was examined, and the party diverged a little to the north of the railway to inspect a large boulder, which Mr D. Milne Home had declared to be clinkstone porphyry from the Cheviots, but which some of the members were much inclined to attribute to Hume Castle. Returning to the railway, it was followed to Campfield when the gravel pits were examined, the strata being much contorted; and crossing the railway the terraces and mounds were explored from which the place derives its name. The mound is very remarkable, though it is smaller than the moat at Hawick, or the mound opposite Makerston. It is partly natural and partly artificial, though the tradition that the material of it was taken from the spot at its base, where there is now a small pond or bog, is not implicitly to be believed. On the top of the mound, the edges of some stones protruded which were suspiciously like the sides and ends of a cist. At the parsonage on the arrival

at Cornhill, Mr Fyler showed the cover of a cist lately found not far from this spot, there being in the centre of the upper side of the stone a hemispherical hollow evidently artificial, and about an inch in diameter.

The following plants among others are reported to have been found at Learmouth bog:—*Vaccinium Oxycoccos*, *Pyrola rotundifolia*, *Narthecium ossifragum*, *Hippuris vulgaris*, *Cladium Mariscus*, *Aspidium Thelypteris*, *Ranunculus Lingua*; in Campfield bog, *Aspidium spinosum*,* and at Wark *Saponaria officinalis* was gathered on the roadside, but not being in flower it could not be determined whether it was the double variety often seen in cottage gardens.

Mr Lamb reported the capture of *Epione vespartaria*, of which he got two specimens in Learmouth bog, which is a new locality, and the only one in this district.

After dinner a discussion took place on the process of formation of Kaims, in which the Rev. Mr Walker of Greenlaw, Mr Stevenson, and Mr Mearns took part. The conditions necessary to such a deposit must be so complicated, and may be so temporary, that it must be difficult now to discover and describe them.

A rainy morning ushered in the 27th of August, the day of the Longhoughton meeting, and with but few and short intervals the rain continued to fall during the day. The meeting in consequence was a small one, there having assembled at breakfast only Mr Turnbull the president, Rev. Geo. Rooke, Mr Brack Boyd, Mr C. P. Bosanquet, Mr Geo. Tate, secretary, Mr Thos. Tate, and Mr Robert Dunn, Vice-President of the Ethnological Society of London. They were afterwards joined by the Rev. H. Bell, Vicar of Longhoughton, Rev. E. Mangin, Mr Hunter, and the Rev. R. Webster.

The following gentlemen, proposed at last meeting, were elected:—Mr Geo. Brown, Coldstream; Mr J. Paterson of Berwick, London; Mr James Grant; Mr Thomas Hubback, Sunnilaws, Kelso; Rev. Adam Davison, Yetholm, and Lord

* The same fern has also been found in considerable abundance in a bog on the farm of Doddington by the Rev. W. Lamb and W. Boyd.

Henry Ker, Kelso; and Mr Robert Brown, of Littlehoughton, was proposed for membership.

After breakfast the party visited the church, where they were met by Mr Bell, the Vicar. Besides being a church, this, like some others in the district, had at one time been also a place of defence, and accordingly the west end of it forms a massive tower fitted to resist the attacks of invading Scotch marauders. The date of the building is uncertain, and probably it consists of portions erected at different times. There is only one characteristic window, which is decorated, and is apparently of the early part of the 14th century. The arch between the nave and chancel is very narrow, and is quite plain, having no moulding of any kind. There are no pillars from which it springs, but it rests on a simple string course which is continued along part of the walls. The arch itself is covered with plaster, but Mr Bell stated that it is built of rubble. The arch through which the nave is extended into the tower is ornamented with plain mouldings, and rises from simple abutments.

Notwithstanding the rain which still continued to fall, conveyances were procured and the party drove to Howick village, from which they walked to the coast at Cullernose to examine the instructive section of rocks exposed in the cliffs from that point to Howick burn. Underneath the shelter of an overhanging rock Mr Tate gave an interesting and lucid description of the phenomena which we here observed, explaining that the section presents an epitome of the mountain limestone formation of Northumberland, characteristic beds of limestone, sandstone, shale, and coal alternating with each other, many of them being fossiliferous. Within a few yards to the north rises the rude semi-columnar basaltic mass of Cullernose, from whose base the sea never recedes, and which towers over the waters to a height of 120 feet. At low water however a gritty sandstone is visibly underlying it. At this point this basalt or whin-sill, as it is locally called, leaves the coast, and runs across the country in a south-west direction. At the junction of the basaltic mass with the stratified rocks,

the latter are torn into fragments, displaced and contorted in the most remarkable way, showing evidence of the mechanical effect of the eruptive rock. In some places a mass of basalt appears intruded among the limestone and sandstone strata, these being bent over it, while at other places the basalt overlies the strata or is inserted between them. It is a curious fact that when basalt and limestone come in contact, each seems to be acted on by the other, and to partake to a certain extent of the nature of the other—the basalt near the place of contact becoming to a certain extent calcareous. A little to the south of our shelter is a beautiful basaltic dyke running E. 50 N. to W. 50 S., nearly perpendicular, four feet broad, and rising like an artificial wall above the adjoining strata. It cannot be traced into the whin-sill, but it illustrates what has been called the geographical relation of such dykes to this sill. Above us and beneath our feet, sandstones, limestones, shales, and coal-seams, alternate with each other, and many of them are fossiliferous. The shale in particular is filled with fossils, and the weather and tide washing away the softer matrix leaves the fossils standing in high relief. This was no day for breaking them out; but there were observed, among others more common, the following, which were first observed here by our secretary, Mr Tate:—the Trilobite *Griffithides Farnensis*, the Annelids *Sabella antiqua*, *Serpulites carbonarius*, *Crassopodia Embletonia*, *Eione moniliformis*, the Echinoderm *Archæocidaris Uriei*, the Mollusks *Bellerophon decussatus*, *Loxonema rugifera* and *sulculosa*, *Arca cancellata*, *Leptodomus costellatus*, *Pteronites persulcatus*, *Aviculo-pecten cælatus*, *Amusium deornatum*, &c.

Proceeding southwards, scrambling over rolled masses of limestone and basalt, the party examined the section exposed in the cliffs, and besides a great dislocation opposite the village of Howick, which throws up the strata on the north side several hundred feet above those on the south side of it, Mr Tate pointed out many smaller dislocations. He stated that in consequence of such faults the same beds appear along the coast at Beadnell, at North Sunderland, and at Scremerston,

although the dip would without these dislocations have buried them deep in the earth in the space of a few miles. An account of the geology of this coast, by Mr Tate, appeared in our transactions in 1852, in which there is a list of other fossils. In consequence of the tide rising to the base of some of the cliffs, the party was obliged to leave the beach and to walk along the drive on the top of the banks to Howick burn, visiting in their way a circular encampment on the top of a little hill near its mouth. Descending from this hill into the glen, they followed the "long walk" all the way to the church. In their way, they stopped to examine some fine specimens of *Pinus nobilis*, *Abies menziesii* and others. The church is beautifully situated on the top of a steep wooded bank, underneath which flows the burn, and through the trees a fine glimpse is got of the Hall and its flower garden. The church has been recently restored, or rather remodelled, for its original design (as appearing from a drawing in the vestry,) was as hideous as its present form is beautiful. It contains a richly sculptured monument to the late Earl Grey. From the church the party visited the gardens, and partly in conveyances and partly on foot returned to the Blue Bell at Longhoughton. Contrary to expectation no additional members appeared at dinner.

After dinner Mr Tate read a paper on the manor, vill, and church of Longhoughton, containing very curious extracts from the Register of the church, in which the vicar records very freely the character of his parishioners. It forms not the least amusing of the papers in our transactions. Mr Tate also exhibited a collection of fossils from the rocks which the club had just visited. So closed a day in which the interest of the expedition much more than compensated the inauspiciousness of the weather.

As appears from the preceding minutes, the meeting at Longhoughton was originally appointed to be held in June, being the period of the year best suited for a geological examination of the sea coast; but as the club had, at the request

of a committee formed in Newcastle, memorialized the British Association for the advancement of Science to hold their meeting this year in Newcastle, they considered it courteous to assist in undertaking any excursion within their limits. The geological section along the Howick coast being one of the most instructive in the north of England, it was thought that an excursion to that place would be of the highest interest to the members of the Association. The Newcastle local committee had authorised one of the secretaries to organize such an excursion, and the meeting at Longhoughton was deferred in the expectation, that the Association would unite with the club in visiting the Howick coast. The plan however was eventually withdrawn by the Newcastle local committee, and therefore the club had not an opportunity of coöperating with the Association at the recent meeting of that body at Newcastle.

These minutes suggest a remark, which indeed must occur to any one who has been in the habit of attending our meetings, viz., that a considerable change is taking place in the subjects to which our attention is directed. Archæology is gaining ground among us and is forming a much more important part of our proceedings than it used to do. For example, I find that during the first ten years of the existence of the club, out of 74 papers and notices printed in our transactions, 67 were on various subjects connected with natural history and only 7 on archæological subjects; while during the last ten years, out of 73 papers and notices, 44 are on natural history and 29 on archæology. If this antiquarian spirit had arisen fifty years ago, how many curious monuments and interesting remains would have been preserved to us of which now we have little but the empty name. Entomology too is a subject which has taken a start since our club was instituted. Out of 31 papers and notices which have appeared altogether in our transactions, only 3 are in the first ten years, 7 are in the last ten, and the remaining 21 in the intermediate eleven years. On this branch are some most laborious and exhaustive papers. In zoology also the last

ten years' transactions contain three times as many papers as the first ten. While these subjects are thus in the ascendant other subjects seem to have become neglected. Ichthyology for instance produced 7 papers and notices during the first ten years and only one since, and that one is not within the last ten years. Meteorology also has only produced one notice during the last ten years while our transactions contain 8 during the first ten. When this subject is attracting so much attention generally, is there no member of our club able and willing to examine the local meteorological state and changes of our district? Geology, botany, and ornithology continue their equable progress, the number of papers during each decennial period being nearly the same.

To ascertain the progress of the club in these different branches of our subject, I made a rough analysis of the transactions, and the following is the result of it. During the existence of the club it has printed on

Geology and mineralogy	..	16	papers & notices.	
Botany	.. ..	37	„	„
Ornithology	.. ..	24	„	„
Ichthyology	.. ..	8	„	„
Meteorology	.. ..	15	„	„
Entomology	.. ..	31	„	„
Mollusca, crustacea, zoophytes, &c.		28	„	„
Archæology	.. ..	46	„	„
Miscellaneous	.. ..	10	„	„

In all 215,

many of which would do credit to our most learned societies.

With thanks for the consideration which I have met with in the discharge of my not very arduous duties, and with pleasurable recollections of the meetings of the year, I now resign to my successor the office with which your kindness has honoured me, but which I am sensible I have unsatisfactorily filled.

List of Fungi observed in the Neighbourhood of Jedburgh, Roxburghshire. BY ARCHIBALD JERDON.

Too little attention is, in general, paid by British botanists to the class FUNGI, though it contains many most interesting productions, and deserves more study than has hitherto been bestowed upon it, in this country.

There are, I think, several reasons for this neglect, among which is the fact that a great proportion of the plants of this class are very short-lived, and consequently, if they are not gathered precisely at the proper moment, are difficult of determination, and soon become disagreeable and even loathsome objects from decay. Another reason may be, that Fungi, in general, do not make good specimens for the Herbarium, however well prepared, and therefore cannot be satisfactorily preserved for reference. Many of the smaller and harder kinds, however, can be dried and preserved, with very little alteration of form and colour.

Notwithstanding these disadvantages, the study of the Fungi is full of interest, and it can be pursued at a season, when most of the gayer productions of Flora are not to be seen, as many of the smaller species, particularly those that grow on dead wood, attain their perfection during the winter months.

The following list contains the species, observed by me during a period of about ten years, and is arranged according to Berkeley's "Outlines of British Fungology."

FAMILY I. HYMENOMYCETES.

Order 1. AGARICINI.

GENUS. AGARICUS.

Sub-genera.

- (AMANITA) PHALLOIDES. In woods. Not common.
 ,, MUSCARIUS. In plantations of fir, or birch. Common.
 ,, RUBESCENS. In woods. Common.
 ,, EXCELSUS. In woods. Not very common.
 ,, VAGINATUS. In woods. Very common. Edible.
 (LEPIOTA) RACHODES. In woods and under hedges. Not uncommon. Edible.
 ,, CRISTATUS. In fields and woods. Not uncommon.
 ,, GRANULOSUS. In woods, pastures, heaths, &c. Very common.
 (ARMILLARIA) MELLEUS. On stumps of trees. Very common.
 (TRICHOLOMA) EQUESTRIS. Fir woods. Not uncommon.
 ,, FUCATUS. Fir woods. Not uncommon.

Sub-genera.

- (*TRICHOLOMA*) *FLAVO-BRUNNEUS*. In fir woods. Rare.
 „ *RUTILANS*. On fir stumps. Common.
 „ *IMBRICATUS*. In woods. Not uncommon.
 „ *VACCINUS*. In fir woods. Not uncommon.
 „ *TERREUS*. In fir and other woods. Common.
 „ *SAPONACEUS*. In woods. Rare.
 „ *GAMBOSUS*. Pastures, in May and June. Not rare.
 Edible.
 „ *MONSTROSUS*. On grass under trees. Rare. A. J.*
 „ *PERSONATUS*. Pastures and woods. Common.
 Edible.
 „ *CINERASCENS*. Grassy places under trees. Rare.
 „ *GRAMMOPDIUS*. In pastures. Not uncommon.
 Edible.
- (*CLITOCYBE*) *NEBULARIS*. In woods, &c. Common. Edible.
 „ *ODORUS*. In woods. Not uncommon. Fragrant.
 „ *CERUSSATUS*. In fir woods. Not uncommon.
 „ *CANDICANS*. Among leaves in woods. Rare.
 „ *ELIXUS*. In fir woods, among heather, &c. Common.
 „ *GIGANTEUS*. In woods and pastures forming rings.
 „ *INFUNDIBULIFORMIS*. Pastures, &c. Not common.
 „ *GEOTROPUS*. In woods. Common.
 „ *FLACCIDUS*. In fir woods. Not uncommon.
 „ *CYATHIFORMIS*. Pastures, &c. Common, late in the
 year.
 „ *METACHROUS*. In woods, late in the year. Common.
 „ *FRAGRANS*. In woods, late in the year. Common.
 Smells of aniseed; like it, odorous.
 „ *ECTYPUS*. In a bog at Fairnington. Very Rare.
 A. J.
 „ *LACCATUS*. In woods, &c. Very common. There is
 a beautiful amethyst variety.
- (*COLLYBLA*) *RADICATUS*. On stumps of trees, &c. Common.
 „ *MACULATUS*. In fir woods and on heaths. Not rare.
 „ *BUTYRACEUS*. In fir woods. Common.
 „ *VELUTIPES*. On logs and trunks of trees. Very com-
 mon.
 „ *CONFLUENS*. In woods. Rather rare.
 „ *TUBEROSUS*. On decaying Agarics. Rare.
 „ *TENACELLUS*. On fir cones lying on the ground.
 Common.
 „ *DRYOPHILUS*. In woods. Not uncommon.
- (*MYCENA*) *PURUS*. In woods, &c. Very common. Smells like
 radishes.
 „ *IRIS*. On fir stumps. Rare.
 „ *LACTEUS*. In fir woods. Not common.

* The species marked with the initials A. J. were first found in Great Britain by me.

Sub-genera.

- (MYCENA) GALERICULATUS. On stumps of trees. Common.
 ,, POLYGRAMMUS. On stumps of trees. Not uncommon.
 ,, PARABOLICUS. On a currant bush. Rare.
 ,, FILOPES. In woods. Common.
 ,, GALOPUS. In woods, &c. Rare.
 ,, EPIPTERYGIUS. Among leaves &c., in woods. Common.
 ,, PELLICULOSUS. On heaths. Rare. Moor near Mossburnford. A. J.
 ,, VULGARIS. In fir and larch plantations. Not common.
 ,, STYLOBATES. On twigs and sticks. Not common.
 ,, CORTICOLA. On the bark of living trees, chiefly elms. Common.
 ,, CAPILLARIS. On dead leaves, &c. Not common.
 (OMPHALIA) MURALIS. On old walls. Not common.
 ,, UMBELLIFERUS. On bogs and moors. Common.
 ,, STELLATUS. On sticks, &c., on the ground. Not common.
 ,, FIBULA. Among moss, &c. Not very common.
 ,, SPHAGNICOLA. On moss in bogs. Rare.
 (PLEUROTUS) OSTREATUS. On dead trees. Not uncommon.
 ,, SEROTINUS. On dead trunks of birch and alder. Not uncommon. A. J.
 ,, MITIS. On dead fir and larch. Common.
 ,, SEPTICUS. On dead twigs, &c. Not uncommon.
 (PLUTEUS) CERVINUS. On stumps of trees and on the ground. Rather common.
 (ENTOLOMA) SERICELLUS. Grassy borders of woods. Rare.
 (CLITOPILUS) PRUNULUS. Grassy woods. Not rare. The true "Monceron."
 (LEPTONIA) EUCHROUS. On a stump of alder. A. J. Rare.
 ,, INCANUS. In pastures. Rare.
 (NOLANEA) PASCUS. In woods and pastures.
 (PHOLIOTA) AUREUS. On dead stumps. Not uncommon.
 ,, PRÆCOX. In pastures and by road sides. Spring. Not uncommon.
 ,, SQUARROSUS. On stumps of trees. Common.
 ,, FLAMMANS. On trunks of fir and larch. Not uncommon. A beautiful species.
 ,, MUTABILIS. On stumps of trees. Common.
 ,, LEVEILLIANUS. On bare soil. Rare.
 (HEBELOMA) SCABER. In fir woods. Not uncommon.
 ,, RIMOSUS. In woods. Rather common.
 ,, GEOPHYLLUS. In woods. Common. Variable in colour.
 ,, CRUSTULINIFORMIS. In grassy woods. Rather common.

Sub-genera.

- (*FLAMMULA*) *FLAVIDUS*. On stumps of firs. Not common.
 (*NAUCORIA*) *MELINOIDES*. On grass. Rather common.
 „ *SEMIORBIULARIS*. In pastures. Not rare.
 „ *FURFURACEUS*. On sticks, &c. Rare.
 (*GALERA*) *TENER*. Pastures. Rather common.
 „ *HYPNORUM*. Boggy places, among moss. Common.
 (*CREPIDOTUS*) *MOLLIS*. On dead trees and stumps. Not uncommon.
 „ *VARIABILIS*. On dead sticks and twigs. Not uncommon.
 (*PRATELLA*) *CAMPESTRIS*. In pastures. Common. The common mushroom.
 „ *ARVENSIS*. In pastures. Not uncommon. Sometimes called the “Horse Mushroom.”
 „ *ÆRUGINOSUS*. In woods and waste ground. Common.
 „ *SQUAMOSUS*. In woods among sticks. Not common.
 „ *STERCORARIUS*. In rich pastures and on dung. Not uncommon.
 „ *SEMIGLOBATUS*. In rich pastures and on dung. Common.
 (*HYPHOLOMA*) *SUBLATERITIUS*. On fir stumps, &c. Common.
 „ *FASCICULARIS*. On stumps of trees, &c. Very common.
 „ *DISPERSUS*. In fir woods and on stumps. Not rare. A. J.
 „ *LACRYMABUNDUS*. On trunks of trees and on the ground. Not uncommon.
 „ *VELUTINUS*. On stumps of trees. Rare.
 „ *APPENDICULATUS*. On the ground and on stumps. Common.
 (*PSILOLYBE*) *FÆNISSECH*. On leaves and pastures. Common.
 „ *SEMILANCEOLATUS*. On dung in pastures. Not uncommon.
 (*PSATHYRA*) *SPADICEO-GRISEUS*. On a dead trunk of willow. Rare.
 (*PANÆOLUS*) *SEPARATUS*. On dung. Common.
 „ *FIMIPUTRIS*. On dung. Common.
 „ *CAMPANULATUS*. Pastures. Common.
 (*PSATHYRELLA*) *ATOMATUS*. Grassy places and hedges. Common.
 „ *HIASCENS*. Grassy places and hedges. Rare.
 „ *DISSEMINATUS*. On stumps of trees and on the ground. Very common. Small in size.

GENERA.

- COPRINUS COMATUS*. Road sides and pastures. Rather common.
 „ *ATRAMENTARIUS*. About old trees and on the ground. Very common.

- COPRINUS NIVEUS. On horse-dung, &c. Common. Snow-white in its early stages.
- „ MICACEUS. About old stumps, &c. Very common.
- „ RADIATUS. On cow dung. Rare. Very small.
- „ EPHEMERUS. On dunghills. Common.
- „ PLICATILIS. On lawns and pastures. Common. Very delicate.
- BOLBITIUS TITUBANS. On grass. Not uncommon.
- CORTINARIUS PURPURASCENS. In woods. Common.
- „ COLLINITUS. In woods. Rare.
- „ ELATIOR. In fir woods. Common.
- „ PHOLIDEUS. In woods. Rare.
- „ OCHROLEUCUS. In woods. Rare. Mossburnford.
- A. J.
- „ CANINUS. In woods, &c. Rather common.
- „ ANOMALUS. Fir woods. Common.
- „ CINNAMOMEUS. Fir woods. Common.
- „ HINNULEUS. Woods, &c. Common.
- „ ACUTUS. Fir wood, Mossburnford. A. J.
- PAXILLUS INVOLUTUS. In woods, pastures, &c. Very common.
- GOMPHIDIUS GLUTINOSUS. Fir woods. Not uncommon.
- HYGROPHORUS COSSUS. In woods. Rare.
- „ HYPOTHEJUS. Fir woods, late in the autumn.
- Common.
- „ PRATENSIS. Upland pastures. Common.
- „ VIRGINEUS. Lawns and pastures. Very common.
- „ LETUS. Upland pastures. Not uncommon.
- „ CERACEUS. Lawns and pastures. Not uncommon.
- „ COCCINEUS. Lawns and pastures. Very common.
- „ MINIATUS. Moist heaths, &c. Not uncommon.
- „ PUNICEUS. Upland pastures. Common.
- „ CHLOROPHANUS. Pastures. Common. A. J.
- „ CONICUS. Pastures. Common.
- „ CALYPTRÆFORMIS. Pastures. Rare. A beautiful species of a pale rose colour.
- „ PSITTACINUS. Pastures. Common.
- „ UNGUINOSUS. On lawns. Not uncommon.
- LACTARIUS TORMINOSUS. In woods and fields. Not uncommon.
- „ TURPIS. Grassy places, generally under birch trees.
- Common.
- „ BLENNIUS. In woods under beech trees. Common.
- „ PYROGALUS. On grass under trees. Not uncommon.
- „ PIPERATUS. Woods. Not uncommon.
- „ VELLEREUS. Woods. Not uncommon.
- „ DELICIOSUS. In fir woods. Not uncommon.
- „ SERIFLUUS. Woods. Not uncommon.
- „ SUBDULCIS. Woods. Common.

- LACTARIUS RUFUS.** Fir woods. Very common.
RASSULA NIGRICOANS. Woods. Common.
 „ **VESCA.** Woods. Not uncommon.
 „ **METEROPHYLLA.** Woods. Not uncommon.
 „ **RUBRA (?)** Woods. Not uncommon.
 „ **FÆTENS.** Woods. Common.
 „ **FRAGILIS.** Woods. Common.
 „ **INTEGRA.** Woods. Common.
CANTHARELLUS CIBARIUS. Woods. Common. Edible.
 „ **AURANTIACUS.** Fir woods, &c. Common.
 „ **UMBONATUS.** Upland pastures. Near Mossburnford. A. J.
MARASMIUS PERONATUS. Woods. Common.
 „ **OREADES.** Grassy banks and pastures. Common.
 „ **RAMEALIS.** On sticks, &c. Not common.
 „ **ANDROSACEUS.** Fir woods on leaves, &c. Not common.
 „ **ROTULA.** On sticks, &c. Common.
 „ **INSITITIUS.** On leaves, &c. Rare.
 „ **EPIPHYLLUS.** On leaves, twigs, &c. Rare.
LENTINUS LEPIDEUS. On the planks of a railway bridge.
 „ **COCHLEATUS.** On stumps of trees. Rare.
PANUS CONCHATUS. On stumps of trees. Rare.

Order 2. **POLYPOREI.**

- BOLETUS LUTEUS.** Fir woods and heaths. Common.
 „ **ELEGANS.** Woods. Very common.
 „ **BOVINUS.** Fir woods. Very common.
 „ **BADIUS.** Fir woods. Not uncommon.
 „ **PIPERATUS.** Dry banks, &c. Not uncommon.
 „ **VARIEGATUS.** Fir woods. Common.
 „ **CHRYSENTERON.** Woods, fields, &c. Common.
 „ **SUBTORMENTOSUS.** Woods, fields, &c. Not uncommon.
 „ **LURIDUS.** Dry woods. Common.
 „ **EDULIS.** Woods. Common. Edible.
 „ **SCABER.** Woods and pastures. Common.
POLYPORUS SQUAMOSUS. On stumps and trunks of trees, especially ash. Common.
 „ **PICIPES.** On stumps and on the ground. Rare.
 „ **VARIUS.** On trunks of trees. Not uncommon.
 „ **ELEGANS.** On trunks of trees. Not uncommon.
 „ **GIGANTEUS.** On stumps. Rare.
 „ **SULPHUREUS.** On trunks of trees. Rare.
 „ **CHIONEUS.** On a piece of paling, Mossburnford. A. J.
 „ **CRISPUS.** On stumps. Not uncommon.

- POLYPORUS AMORPHUS. On stumps and trunks of Scotch fir. Not uncommon.
- „ HISPIDUS. On trunks of living trees. Rare.
- „ DRYADEUS. On “the Capon-tree.” Rare.
- „ BETULINUS. On birch trees. Common.
- „ IGNIARIUS. On willows, &c. Common.
- „ ANNOSUS. At the foot of old tree stumps, &c. Common.
- „ RADIATUS. On alders. Common.
- „ VERSICOLOR. On stumps and trunks. Common.
- „ ABIETINUS. On stumps and trunks of fir and pine. Very common.
- „ FERRUGINOSUS. On sticks and branches. Not common.
- „ VULGARIS. On decaying wood. Not uncommon.
- „ VAPORARIUS. On dead branches. Common.
- TRAMETES SUAVEOLENS. On willows. Not uncommon.
- MERULIUS CORIUM. On dead branches, &c. Common.
- „ SERPENS. On dead fir. Rare.
- „ LACRYMANS. In cellars, &c. The cause of dry rot.

Order 3. HYDNEI.

- HYDNUM REPANDUM. Woods. Not uncommon. Edible.
- „ AURISCALPIUM. On cones of Scotch fir. Rare.
- RADULUM ORBICULARE. On dead branches of birch. Not uncommon.
- GRANDINIA GRANULOSA. On rotten wood. Not uncommon.

Order 4. AURICULARINI.

- THELEPHORA PALMATA. Woods. Rare. Very foetid.
- „ LACINIATA. Heathy woods. Not uncommon.
- STEREUM PURPUREUM. On dead poplars. Common.
- „ HIRSUTUM. On dead oak, birch, &c. Very common.
- „ SPADICEUM. On dead stumps of oak. Not uncommon.
- „ SANGUINOLENTUM. On firs and larches. Common.
- „ RUGOSUM. On dead stumps and trunks. Common.
- HYMENOCLETE TABACINA. On dead branches. Not uncommon.
- CORTICIUM LÆVE. On dead sticks, &c. Common.
- „ ROSEUM. On dead sticks, &c. Rare.
- „ LIVIDUM. On dead hawthorn. Rare.
- „ QUERCINUM. On dead branches of oak and beech. Common.
- „ CINEREUM. On dead sticks, especially of ash. Common.
- „ INCARNATUM. On dead sticks, especially of whin and broom. Common.

- CORTICIUM POLYGONIUM. On dead branches of aspen. Not common.
 ,, COMEDENS. On branches of trees. Very common.
 ,, SAMBUCL. On dead elder. Common.
 CYPHELLA CAPULA. On dead stems of herbaceous plants as nettle. Not common.

Order 5. CLAVARIEI.

- CLAVARIA FASTIGIATA. In pastures. Common.
 ,, CINEREA. In pastures under trees. Rare.
 ,, RUGOSA. Woods. Common.
 ,, ABIETINA. Fir woods. Not rare.
 ,, FUSIFORMIS. Pastures. Not uncommon.
 ,, VERMICULATA. Lawns. Common.
 ,, CONTORTA. On dead branches of alder. Rare.
 ,, UNCIALIS. On dead stems of umbelliferæ. Not uncommon.
 CALOCERA VISCOSA. On fir stumps. Common. A beautiful fungus.
 TYPHULA ERYTHROPUS. On twigs, leafstalks, &c. Not uncommon.

Order 6. TREMELLINI.

- TREMELLA FOLIACEA. On old stumps, &c. Rare.
 ,, MESENTERICA. On dead sticks and branches. Common.
 ,, ALBIDA. On dead sticks and branches. Common.
 ,, INDECORATA. On dead branches of oak. Rare. A. J.
 ,, SARCOIDES. On old stumps and trunks. Common.
 ,, TUBERCULARIA. On dead branches. Not uncommon.
 EXIDIA RECISA. On dead branches of willow. Common.
 ,, GLANDULOSA. On dead branches of oak and beech. Common. This black jelly-like fungus bears the vernacular name of "Witches' butter."
 ,, SACCHARINA. On dead Scotch fir. Mossburnford. A. J.
 NÆMATELIA ENCEPHALA. On dead larch. Not uncommon.
 ,, VIRESCENS. On branches of whin and broom. Not rare.
 DACRYMYCES STILLATUS. On old paling, gateposts, &c. Very common.
 ,, CHRYSOCOMUS. On paling. Not uncommon.

FAMILY II. GASTEROMYCETES.

Order 7. HYPOGÆI.

No species of this Order have occurred to me.

Order 8. PHALLOIDEI.

PHALLUS IMPUDICUS. Woods and hedges. Very common. Smell very disagreeable.

Order 9. TRICHOGASTRES.

BOVISTA NIGRESCENS. In pastures. Common.

LYCOPERDON GIGANTEUM. In pastures. Rather rare. Sometimes very large.

„ GEMMATUM. In woods and pastures. Very common and variable.

„ PYRIFORME. On decaying stumps. Not uncommon.

SCLERODERMA VULGARE. On gravel walls and dry banks. Not uncommon.

Order 10. MYXOGASTRES.

LYCOGOLA EPIDENDRUM. On decayed wood. Common.

RETICULARIA UMBRINA. On dead alders. Rare.

ÆTHALIUM SEPTICUM. On moss twigs, &c., in woods. Not rare.

DIDERMA VERNICOSUM. On dead twigs, &c. Rare.

„ TREVELYANI. This, on a closely allied species, I once found in some abundance on decaying leaves at Mossburnford.

DIDYMIUM HEMISPHERICUM. On dead twigs. Not common.

„ SQAMULOSUM. On dead leaves, &c. Not uncommon.

„ PERTUSUM. On dead stems of plants. Not common.

„ CINEREUM. On small dead branches, &c. Not uncommon.

PHYSARUM NUTANS. On decayed wood. Not uncommon.

„ ALBUM. On dead stems of herbaceous plants. Not rare.

CRATERIUM LEUCOCEPHALUM. On dead leaves, branches, &c. Not uncommon.

STEMONITIS FUSCA. On rotten stumps, &c. Common.

„ OVATA. On dead sticks. Rare.

„ OBTUSATA. On dead sticks. Rare.

ARCYRIA PUNICEA. On rotten stumps. Not uncommon.

„ CINEREA. On decaying branches. Rare.

TRICHIA FALLAX. On rotten wood. Rare.

„ CLAVATA. On rotten wood. Not rare.

„ TURBINATA. On rotten wood. Not rare.

„ CHRYSOSPERMA. On rotten wood. Common.

„ VARIA. On rotten wood. Common.

PERICHÆNA POPULINA. On decaying trunks. Not uncommon.

LICEA FRAGIFORMIS. On rotten stumps. Rare.

PHELONITIS STROBILINA. Between the scales of rotting fir cones.

Order 11. NIDULARIÆ.

CYATHUS VERNICOSUS. On straw or dung in fields. Not uncommon.

CRUCIBULUM VULGARE. On dead wood, &c. Not uncommon.

SPHEROBOLUS STELLATUS. On rotten wood, &c. Not uncommon.
A very curious fungus, ejecting elastically, when ripe, a rounded *sporangium*, or seed vessel.

FAMILY III. CONROMYCETES.

Order 12. SPHÆRONEMÆ.

LEPTOSTROMA SPIRÆÆ. On dead stems of *Spiræa Ulmaria*.

PHOMA ASTERISCUS. On dead stems of *Heracleum*.

„ NEBULOSUM. On dead stems of nettle.

APOSPHERIA ACUTA. On dead stems of nettle. Common.

SPHÆROPSIS TAXI. On dead yew leaves.

DOTHIORA SPHÆROIDES. On dead branches of ash. Not rare.

ACROSPERMUM COMPRESSUM. On dead stems of nettle. Not rare.

PILIDIUM ACERINUM. On dead sycamore leaves. Rare.

SEPTORIA ULMI. On living leaves of elm.

„ ÆGOPODII. On living leaves of *Ægopodium Podagraria*.

„ HEDERÆ. On living leaves of ivy.

CYTISPORA RUBESCENS. On dead branches of various trees. Common.

„ CARPHOSPERMA. On dead branches of laburnum, &c.
Not rare.

„ LEUCOSPERMA. On dead branches of rose, sycamore, &c.

„ FUGAX. On dead branches of willow. Not rare.

MICROPERA DRUPACEARUM. On dead branches of wild cherry.
Common.

DISCELLA MICROSPERMA. On dead twigs of willow. Common.

CEUTHOSPORA PHACIDIoidES. On dead leaves of holly. Common.

„ LAURI. On dead leaves of common laurel. Common.

Order 13. MELANCONIÆ.

MELANCONIUM BICOLOR. On dead branches of birch. Common.

„ SPHEROSPERMUM. On dead reeds. Rare.

STILBOSPORA OVATA. On dead twigs.

ASTEROSPORIUM HOFFMANNI. On dead twigs of beech. Not uncommon.

CORYNEUM DISCIFORME. On dead branches of birch. Rare.

NEMASPORÆ ROSÆ. On dead oak. Rare.

Order 14. TORULACEI.

TORULA HERBARUM. On dead herbaceous stems. Not uncommon.

BISPORA MONILIOIDES. On old stumps. Common.

CONIOTHECIUM AMENTACEARUM. On dead branches of willow.

Order 15. PUCCINIÆ.

AREGMA BULBOSUM. On living leaves of bramble. Common.

„ GRACILE. On living leaves of wild rasp. Common.

„ MUCRONATUM. On living leaves of roses. Common.

„ OBTUSATUM. On living leaves of *Potentilla Fragariastrum*.

PUCCINIA GRAMINIS. On wheat and grasses. Common. The true mildew.

„ STRIOLA. On *Carices*, &c.

„ POLYGONORUM. On *Polygona*.

„ VERONICARUM. On *Veronica montana*. Rare.

„ MENTHÆ. On *Mentha arvensis*.

„ VARIABILIS. On dandelion.

„ UMBELLIFERARUM. On *Umbelliferæ*.

„ ÆGOPODII. On *Ægopodium*.

„ VIOLARUM. On *Viola hirta*.

„ SAXIFRAGARUM. On *Adoxa moschatellina*.

„ PULVERULENTA. On *Epilobium hirsutum*.

PODISOMA JUNIPERI-COMMUNIS. On stems of juniper. Not rare.

„ JUNIPERI-SABINÆ. On stems of savine. Not uncommon.

UREDOPOTENTILLARUM. On *Potentillæ*.

„ CONFLUENS. On *Mercurialis perennis*.

„ BIFRONS. On docks.

TRICHOBASIS RUBIGO-VERA. On corn and grasses. The true "rust."

„ SENECTIONIS. On groundsel.

„ LABIATARUM. On *Labiatae*.

„ FABÆ. On beans.

„ SUAVEOLENS. On thistles. Smells like honey.

„ POLYGONORUM. On *Polygona*.

„ GERANII. On *Geranium pratense*.

„ EPILOBII. On *Epilobium montanum*.

„ LINEARIS. On corn and grasses.

UROMYCES APICULATA. On docks, dandelion, &c.

„ FICARLÆ. On *Ranunculus Ficaria*.

„ INTRUSA. On *Alchemilla vulgaris*.

COLEOSPORIUM TUSSILAGINIS. On coltsfoot.

„ PETASITIS. On *Petasites*.

„ CAMPANULÆ. On *Campanula rotundifolia*.

- COLEOSPORIUM SONCHI-ARVENSIS. On sow-thistle.
 „ RHINANTHACEARUM. On *Rhinanthus* and *Bartsia*
Odontites.
 LECYTHEA RUBORUM. On brambles.
 „ ROSÆ. On roses.
 „ SALICETI. On willows.
 „ GYROSA. On wild rasp.
 „ CAPRÆARUM. On sallows.
 „ LINI. On *Linum catharticum*.
 CYSTOPUS CANDIDUS. On *Sysimbrium officinale*.
 USTILAGO SEGETUM. On seeds of corn and grasses. Known to
 farmers as "smut."

Order 16. ÆCIDIACEI.

- RÆSTELIA LACERATA. On hawthorn.
 PERIDERMIIUM PINI. On Scotch fir.
 ÆCIDIIUM ALII. On *Allium ursinum*.
 „ COMPOSITARUM. On coltsfoot.
 „ PERICLYMENI. On wood-lime.
 „ RANUNCULACEARUM. On *Ranunculi*.
 „ GERANII. On *Geranium sylvaticum*.
 „ BERBERIDIS. On berbery.
 „ VIOLÆ. On violets.
 „ ALBESCENS. On *Adoxa moschatellina*.
 „ EPILOBII. On *E. montanum* and *hirsutum*.
 „ GROSSULARIÆ. On gooseberry.
 „ URTICÆ. On *Urtica dioica*.

FAMILY IV. HYPHOMYCETES.

Order 17. ISARIACEI.

- ISARIA CITRINA. On decaying fungi.
 ANTHINA FLAMMEA. On decaying leaves.
 PACHNOCYBE SUBULATA. On decaying plants.

Order 18. STILBACEI.

- STILBUM TOMENTOSUM. On *Trichia*, &c.
 TUBERCULARIA VULGARIS. On dead branches of trees. Very
 common. One of the commonest fungi, appear-
 ing on almost every dead stick in the form of
 little pale red tubercles.
 „ GRANULATA. On dead branches.
 „ NIGRICANS. On dead branches.
 FUSARIUM LATERITIUM. On decaying *Sphæria*, &c.
 „ TREMELLOIDES. On dead stems of *Urtica dioica*.

- EPICOCOUM NEGLECTUM. On peeled oaks, with various moulds.
 ILLOSPORIUM ROSEUM. On lichens. Rare.
 ÆGERITA CANDIDA. On dead damp wood.

Order 19. DEMATIEI.

- SPOROCYBE BRYSSOIDES. On dead stems of *Urtica dioica*. Rare.
 HELMINTHOSPORIUM MACROCARPUM. On dead sticks. Not rare.
 „ TILLÆ. On dead branches of lime. Common.
 POLYTHRINCIUM TRIFOLI. On living leaves of clover. Not common.
 CLADOSPORIUM HERBARUM. On all kinds of decaying substances. Common.
 CAMPTORUM CURVATUM. On dead leaves of *Carex paludosa*. Rare.

Order 20. MUCEDINES.

- ASPERGILLUS GLAUCUS. On various decaying substances. This is the common or “blue mould.”
 „ CANDIDUS. On various decaying substances.
 PERONOSPORA INFESTANS. On potatoes, producing the potatoe disease.
 „ EFFUSA. On garden spinach.
 POLYACTIS CINEREA. On decaying plants, &c., &c. Common.
 PENICILLIUM CRUSTACEUM. On all kinds of decaying substances. This is also a “blue mould.”
 PENICILLIUM SPARSUM B. COREMIUM. On decaying fruit, &c. Common.
 DACTYLIIUM DENDROIDES. On decaying fungi. Not uncommon.
 „ ROSEUM. On decaying plants.
 FUSIDIUM GRISEUM. On dead leaves.
 „ FLAVO-VIRENS. On dead leaves.
 CHÆTOPSIS WAUCHII. On decaying branches.
 BOTRYOSPORIUM DIFFUSUM. On decaying stems of dahlia. Rare.

Order 21. SEPEDONIEI.

- SEPEDONIUM CHRYSOSPERMUM. On decaying *Boleti*. Common.

Order 22. TRICHODERMACEI.

- TRICHODERMA VIRIDE. On dead wood.

FAMILY V. ASCOMYCETES.

Order 23. ELVELLACEI.

- MORCHELLA ESCULENTA.** Grassy places on the banks of the Jed.
Not uncommon. This is the common eatable morell, and appears in the months of April or May.
- „ **SEMILIBERA.** Thickets by the Jed. Rare.
- HELVELLA CRISPA.** In woods and hedges. Rare.
- „ **LACUNOSA.** Woods and hedges. Not common.
- SPATHULARIA FLAVIDA.** In fir woods. Common.
- LEOTIA LUBRICA.** Woods and lawns. Not rare.
- GEOGLOSSUM HIRSUTUM.** On lawns, &c. Not uncommon.
- PEZIZA VENOSA.** Banks of Jed. Common. Appears in spring.
- „ **BADIA.** Woods, &c. Rare.
- „ **ONOTICA.** Beech woods. Rare.
- „ **AURANTIA.** On old chips, &c., &c. Not common.
- „ **VESICULOSA.** On old dunghills. Not uncommon.
- „ **TUBEROSA.** Banks of Jed in spring. Rare.
- „ **GRANULATA.** Cow-dung. Common.
- „ **RUTILANS.** On the ground, among mosses. Not common.
- „ **FURFURACEA.** On dead branches of alder. Not uncommon.
- „ **COCCINEA.** On dead sticks lying on the ground. Not common.
- „ **SCUTELLATA.** On decaying wood, &c., &c. Not uncommon.
- „ **STERCOREA.** On cow-dung. Common.
- „ **CILIARIS.** On dead leaves. Rare.
- „ **VIRGINEA.** On dead stems of plants, &c., &c. Not uncommon.
- „ **NIVEA.** On stumps, &c., &c. Not uncommon.
- „ **CALYCINA.** On dead branches of larch and fir. Common.
- „ **BICOLOR.** On dead branches of oak. Rare.
- „ **CERINEA.** On dead wood, especially sawn surfaces. Common.
- „ **CLANDESTINA.** On dead stems of raspberry, &c. Not uncommon.
- „ **CAULICOLA.** On dead stems of grass. Rare.
- „ **ACUUM.** On decaying leaves of firs. A. J.
- „ **SCHUMACHERI.** On dead branches of various kinds. Common.
- „ **HYALINA.** On old palings, &c. Common.
- „ **SULPHUREA.** On dead stems of nettles and other herbaceous plants. Common.
- „ **PLANO-UMBILICATA.** On dead *Angelica sylvestris*. Rare.
- „ **VILLOSA.** On dead thistles, &c. Common.
- „ **APALA.** On dead rushes. Not common.

- PEZIZA ANOMALA. On dead branches. Common.
- „ ROSÆ. On dead branches of wild rose, &c. Common.
- „ FUSCA. On dead branches of alder, &c. Not uncommon.
- „ FIRMA. On dead oak, &c. Not rare.
- „ CORONATA. On dead stems of artichokes, &c.
- „ CYATHOIDEA. On dead herbaceous stems. Common.
- „ VINOSA. On dead branches of elm, &c. Not uncommon.
- „ CINEREA. On decaying wood. Very common.
- „ SPHÆRIOIDES. On *Lychnis dioica*.
- „ XANTHOSTIGMA. On dead fir.
- „ ERUMPENS. On dead *Sycamore* petioles. Common.
- „ FUSARIOIDES. On dead stems of nettles. Common. *Fusarium tremelloides* is a state of this plant.
- HELOTIUM ÆRUGINOSUM. On fallen branches of oak and ash. Not rare.
- „ VIRGULTORUM b. FLAVESCENS. On dead branches of willow. A. J.
- „ LUTESCENS. On dead branches. Rare.
- „ PALLESCENS. On dead wood, particularly sawn surfaces. Not uncommon.
- „ CITRINUM. On dead branches. Rare.
- „ LENTICULARE. On dead branches. Not uncommon.
- „ CLARO-FLAVUM. On dead branches. Not uncommon.
- „ IMBERBE. On dead branches of willow. A. J.
- „ HERBARUM. On dead stems of herbaceous plants. Not rare.
- „ PUNCTATUM. On dead oak leaves.
- „ MARCHANTLÆ. On fading *Marchantia conica*.
- „ JUNGERMANNIÆ. On various species of *Jungermannia*. A. J.
- TYMPANIS CONSPERSA. On mountain-ash. Rare.
- CENANGIUM CERASI. On wild cherry.
- „ AUCUPARIÆ. On mountain ash.
- „ FULIGINOSUM. On *Salix Helix*. Not common.
- „ FERRUGINOSUM. On Scotch fir. Common.
- „ QUERCINUM. On small branches of oak. Common.
- „ RUBI. On dead stems of raspberry. Common.
- ASCOBOLUS FURFURACEUS. On cow dung. Common.
- BULGARIA INQUINANS. On oak trunks, &c.
- „ SARCOIDES. On old stumps.
- STICTIS RADIATA. On small twigs, &c. Not uncommon.
- „ VERSICOLOR. On dead wood, &c. Common.

Order 24. TUBERACEI.

I am not aware of any species of this Order having occurred in this vicinity. None have been found by me.

Order 25. PHACIDIACEI.

- PHACIDIUM PINI. On Balm of Gilead fir.
 „ CORONATUM. On dead leaves of oak and beech. Not common.
 HETEROSPHÆRIA PATELLA. On dead stems of *Angelica sylvestris*. Not rare.
 RHYTISMA ACERINUM. On sycamore leaves.
 „ URTICÆ. On dead stems of nettle.
 HYSTERIUM CURVATUM. On dead branches of rose. Not common.
 „ FRAXINI. On ash. Common.
 „ CONIGENUM. On cones of Scotch fir.
 „ RUBI. On brambles.
 „ PINASTRI. On fir and juniper leaves.
 „ FOLICOLA. On leaves of hawthorn.
 STEGIA ILICIS. On dead leaves of holly.
 TROCHILA CRATERIUM. On dead ivy leaves.
 „ LAURO-CERASI. On leaves of Portugal and common laurel.

Order 26. SPHÆRIACEI.

- HYPOCRÆA RUFA. On dead stems of raspberry. Rare.
 „ LATERITIA. On *Agaricus deliciosus*. Rare.
 „ TYPHINA. On living stems of grasses, generally *Dactylis glomerata*. Not rare.
 XYLARIA HYPOXYLON. On stumps of trees, &c., &c. Common.
 „ CARPOPHILA. On beech-nuts. Not common.
 HYPOXYLON COCCINEUM. On dead branches of beech. Not rare.
 „ MULTIFORME. On dead birch, &c. Common.
 „ FUSCUM. On dead branches of hazel. Common.
 „ RUBIGINOSUM. On ash. Rare.
 „ SERPENS. On oak. Rare.
 DIATRYPE BULLATA. On branches of willow. Not uncommon.
 „ UNDULATA. On dead branches of thorn. Not rare.
 „ STIGMA. On dead branches. Very common.
 „ DISCIFORMIS. On dead branches of beech. Common.
 „ FAVACEA. On birch. Not uncommon.
 „ VERRUCÆFORMIS. On oak. Common.
 „ FERRUGINEA. On hazel. Not common.
 „ FLAVO-VIRENS. On dead branches of various trees. Common.
 „ STRUMELLA. On branches of currant.
 „ HYSTRIX. On hazel. Rare.
 „ LATA. On dead branches. Common.
 VALSA PRUNASTRI. On dead sloe. Common.
 „ STELLULATA. On elm. Common.
 „ CRATÆGI. On dead branches of hawthorn. Not rare.

- VALSA NIVEA.** On bird cherry. Rare.
 „ **LEUCOSTOMA.** On common laurel. Rare.
 „ **ABIETIS.** On silver fir. Rare.
 „ **LEIPHÆMIA.** On oak. Very common.
 „ **TURGIDA.** On beech. Common.
 „ **SALICINA.** On willow. Common.
 „ **AMBIENS.** On apple, hawthorn, &c. Very common.
 „ **STILBOSTOMA.** On sycamore. Common.
 „ **PULCHELLA.** On birch. Not uncommon.
 „ **QUATERNATA.** On beech. Common.
DOTHIDEA TETRASPORA. On dead branches of whin and spurge laurel. A. J.
 „ **RIBESIA.** On dead branches of currant.
 „ **ROSÆ.** On living stems of wild rose. Not uncommon.
ISOTHEA PUSTULA. On oak leaves. Common.
STIGMATEA ALCHEMILLÆ. On living leaves of *Alchemilla vulgaris*. Not uncommon.
NECTRIA CINNABARINA. On dead branches of various kinds. Common.
 „ **COCCINEA.** On beech, willow, &c. Not uncommon.
 „ **SINOPICA.** On ivy. Not uncommon.
 „ **AQUIFOLIA.** On holly. Rare.
 „ **PEZIZA.** On a decaying stump. Rare.
 „ **SANGUINEA.** On dead branches. Rare.
 „ **EPISPHERIA.** On *Diatrype stigma*, and *lata*, &c. Common.
 „ **OCHRACEO-PALLIDA.** On a dead branch of elm. Rare.
SPHERIA DESMAZIERII. On decaying branches of firs. Rare.
 „ **PHÆOSTROMA.** On dead branches. Not uncommon.
 „ **OVINA.** On decayed wood. Rare.
 „ **BRASSICÆ.** On dead cabbage-stalks. Rare.
 „ **CALLIMORPHA.** On dead stems of bramble. Rare.
 „ **SPERMOIDES.** On decaying stumps, &c. Not uncommon.
 „ **MORIFORMIS.** On dead branches, and also on *Polyporus abietinus*. Not uncommon.
 „ **MAMMÆFORMIS.** On dead yew.
 „ **PULVIS-PYRIUS.** On dead sticks, &c. Very common.
 „ **BERBERIDIS.** On dead branches of berberry. Not rare.
 „ **LABURNI.** On laburnum. Rare.
 „ **NIGERRIMA.** On *Diatrype lata*. Rare.
 „ **SPARTII.** On dead broom. Not uncommon.
 „ **LONICERÆ.** On honeysuckle. Not common.
 „ **EUTYPA.** On lime. Rare.
 „ **VELATA.** On lime. Rare.
 „ **DISCUTIENS.** On elm. Not uncommon.
 „ **BERKELEII.** On dead stems of *Angelica sylvestris*. Rare.

- SPHÆRIA PRUINOSA. On dead branches of ash.
 „ MILLEPUNCTATA. On ash. Common.
 „ CLYPEATA. On dead stems of bramble. Rare.
 „ RUSCI. On dead leaves of *Ruscus aculeatus*. Common.
 „ PINASTRI. On dead leaves of silver fir. Common.
 „ ROSTELLATA. On bramble. Rare.
 „ CONIFORMIS. On dead stems of nettle. Common.
 „ ACUMINATA. On dead thistles. Common.
 „ HERBARUM. On various plants.
 „ RUBELLA. On dead stems of *Heracleum*, &c. Not common.
 „ DOLIOLUM. On dead stems of *Heracleum*. Common.
 „ COMPLANATA. On dead stems of *Heracleum*. Common.
 „ DERASA. On dead stems of ragwort. Common.
 „ TUBÆFORMIS. On dead leaves of alder. Rare.
 „ GNOMON. On dead leaves of hazel. Not uncommon.
 „ SETACEA. On dead leaves and *petioles* of sycamore. Common.
 „ PUNCTIFORMIS. On dead leaves.
 „ MACULÆFORMIS. On dead leaves.
 „ OSTRUTHII. On living leaves of *Angelica sylvestris*.
 MASSARIA FÆDANS. On dead branches of elm. Not Common.
 DICHENA RUGOSA. On living bark of oak. Common.
 „ STROBILINA. On dead cones of spruce fir. Common.

Order 27. PERISPORIACEÆ.

- MICROSPHÆRA BERBERIDIS. On living leaves of berberry.
 ERYSIPHE COMMUNIS. On leaves of garden peas, *Lathyrus pratensis*, &c.
 CHÆTOMIUM ELATUM. On decaying straw. Not uncommon.
 EUROTIIUM HERBARIORUM. On plants in Herbaria. Not uncommon.

Order 28. ONYGENEÆ.

No species found.

FAMILY VI. PHYSOMYCETES.

Order 29. ANTENNARIÆ.

No species found.

Order 30. MUCORINI.

- ASCOPHORA MUCEDO. On bread, &c. Not very common.
 MUCOR MUCEDO. On fruit and various decaying substances. Common.
 „ FUSIGER. On decaying *Agarics*. Not common.
 PILOBOLUS CRYSTALLINUS. On cow dung. Not uncommon.

ADDENDA.

- AGARICUS (HEBELOMA) VERSIPELLIS. Fir plantations. A. J.
 „ „ MESOPHÆUS. Fir plantations. A. J.
 „ (PSALLIOTA) JERDONI. (Berkeley and Broome in *Annals and Mag. Nat. Hist.*) Pileus companulato—obtuse, umbonate, fleshy, ochraceous when dry, adorned with superficial evanescent snow-white scales; cuticle not peeling off; stem sericeo-squamulose, hollow; ring superior; gills from pallid becoming brown transversely striate. On a fir stump, Mossburnford, Nov. 1860. Rare. A. J.
 „ (HYPHOLOMA) EPIXANTHUS. On old fir stumps. Not uncommon.
- CORTINARIUS RIGENS. On grass under trees. A. J.
- CYPHELLA CURREYI. (Berkeley and Broome.) Gregarious, minute, pezizæform, white, externally villose. Very like a *Peziza*, but has not the fruit of that genus. On twigs of broom and whin. Not uncommon.
- PERONOSPORA SORDIDA. (Berkeley and Broome.) Spots broad, irregular, hypophyllous, of a dirty lilac colour; threads loosely dichotomous above; apices forked unequal; spores obovate, apiculate. On leaves of *Scrophularia nodosa*. Mossburnford. A. J.
- SPHÆRIA JERDONI. (Berkeley and Broome.) Perithecia scattered or slightly crowded, subglobose with narrower linear ostiola; asci clavate; sporidia biseri-ate, strongly constricted in the centre, as also each of the two bi-trinucleate joints. On dead stems of wild raspberry. Mossburnford. A. J.
- „ STYLOPHORA. (Berkeley and Broome.) At first covered, then exposed; perithecia collected in little orbicular patches, ovate, attenuated above, with styli-form ostiola, longer than themselves; asci broadly clavate; sporidia biseri-ate, hyaline, fusiform, uniseptate, appendiculate at either end. On dead branches of *Acer platunoides*. Mossburnford. A. J.
- „ BLEPHARODES. (Berkeley and Broome.) Completely covered by the cuticle; perithecia globose, depressed; ostiola piercing the cuticle, twice as long; asci clavate; sporidia biseri-ate, hyaline, fusiform. On dead twigs of sycamore. Mossburnford. A. J.

Warkworth—its Castle, Hermitage, and Church. By the
Rev. J. W. DUNN, Vicar of Warkworth.*

WHEN I undertook, at the request of our excellent Secretary, to provide a paper upon Warkworth for this day, I little calculated how much there was to learn upon the subject which must of necessity be learnt, and how much there was to tell which in justice and of necessity must be told. Above all, I fear I did not sufficiently consider how many members of our club there would be present, so much more able than myself to do justice to so interesting and comprehensive a theme.

I throw myself, therefore, in the beginning upon your kind forbearance, and, if I cannot promise much of profit and instruction, I will at all events do my endeavour not to weary you with an excessive dryness of unnecessary detail.

The approach to Warkworth from the north is singularly striking and attractive, and indeed, its very first view prepares the traveller for the antiquarian revel which awaits his more intimate acquaintance with that ancient vill. Taking his stand near the centre of a picturesque and many-angled bridge, which was rebuilt in 1379, and where in former days there stood a pillar† which bore the arms of the noble house of Percy, he is at once struck with the peculiar situation of the place. He will observe that it is all but surrounded by its romantic river. To it the glowing language of an immortal German fiction might be aptly, without one change, applied:—"It seems as though the promontory, enamoured, strives with all its force to penetrate into the beautifully blue limpid stream, while on the other hand, the water, attracted by mutual passion, endeavours to encircle in its embrace the lovely spot, with its undulating grass, and flowers, its waving trees and cool recesses."

The bridge at its southern extremity has been protected by an ancient tower, the ruins of which still remain, and which, when the insular position of Warkworth is considered, must have afforded no small or mean defence in the stirring times of old. Even at a date so comparatively recent as the year 1567, Clarkson, in his Survey, tells us of "a little towre buylded on th' ende of the sayde bridge, where a pare of gates ys hanged: and now the sayd towre ys without roof

* The principal notes accompanying this Paper are due to the research and kindness of my friend, W. H. D. Longstaffe, Esq.

† The remains of this pillar are preserved in the castle yard.

and cover and without amendment will in short tyme utter-ly decay ; yt shall be therefore very requisite that the towre be with all speed repaired, and the gates hanged up, which shall be a great savety and comoditye for the towne."

Passing beneath the time-worn archway of this tower, leaving the church to the right and reserving it for future notice, a few steps convey us to the steep street, on the highest elevation of which the ruined, but yet proud remains of the Castle of Warkworth attest the old-time glories of its noble and lordly owners.

Before proceeding further, I must request you to imagine yourselves seated around the cross* of a market which dates from the time of King John, and, whilst you fix your eyes and thoughts upon yonder gloomy battlements, I shall claim a few moments to give you somewhat of their history.

* It would appear, *primâ facie*, that this portion of the town must be the site of the houses of the New Town or New Borough, which was created by the Lords of Warkworth after their acquisition of the ancient Borough. This is a curious subject, and I offer no apology for giving the evidences chronologically.

Inq. p. m. Rogeri filii Johannis, 32 Hen. III. "Also in respect of the farm rent of the Borough of Warkworth with the farm rent of the *New Town* (novæ villæ) yearly 78s. 8½d., and they ought, in respect of *every house* of the Borough and *New Town*, to find one man to reap in autumn for the lord's board, or to give one penny for two days."

Placita de quo warranto, 21 Ed. I. Robert Fitz Roger put to proof of his title to "the manor of Wercwrth with the appurtenances, except the advowson of the Church of the same manor." Produces Henry II.'s grant to Roger Fitz Richard of the "*Castle of Werkewrd and the manor*, with tol and team and soc and sak and infangenthef and with all liberties and free customs." Also put to proof of his claim to "wreck of the sea in Werkwrth"—"free warren in all his demesne land in Werkwrth, Qualton, and Newburn, market and fair in the *New Town of Werkwrth* (*mercatum et feriam in Nova Villa de Werkwrth*;) &c. Comes and claims wreck and warren by user from before the time of legal memory. "He claims also a market on Monday of every week in his manor of *Newton near* (*juxta Werkwrth*;) and one fair there to last for three days in every year, viz: "on the eve, the day, and the morrow, of St. Laurence." Claims these liberties and also "weyf, infangenthef, and gallows at Warkworth," by user before the time of legal memory. Verdict by the jury in accordance with his claims.

Inq. p. m. Roberti filii Rogeri, 3 Ed. II. "Held the castle and vill of Werkewrth by service of one knight's fee. The vill of Werkewrth is a borough de antiquo, and the farm rent thereof is worth yearly £2 7s. 7½d. There are certain tenements arrented de novo, which are called the town of the New Borough (*villa Novi Burgi*) and the farm rent thereof is worth £1 16s. 4d.

In later times the two boroughs or towns seem to have become fused, and we simply have "the castle and manor of Werkworth," the only trace of the early division being found in the application of the name of the *New Town* to certain strips of freehold land, and other land of ancient tenure adjoining, held by the burgagers under the lord, and lying between the village and the sea. "All the burgesses of the vill of Warkworth hold one parcel of land called Tenterhughe and *New town*, containing 119 seliones of land, rent 37s 5d."—*Humbertson's and Hall's Survey*.

The first account we have of Warkworth is in the year 737, when Ceolwulph, king of Northumberland, granted his manor of Wercewode, and the church he had there builded, to the monastery of Lindisfarne, of which in that year he became a member, and,

“for cowl and beads laid down
The Saxon battle axe and crown.”

The monks did not long enjoy their new possession, for, about 100 years afterwards, they were deprived of it by Osbert, one of the rival princes of Northumbria.

The next notice of Warkworth is not until the reign of Henry II., in, or perhaps before whose fourth year (1145) it was granted by him to Roger Fitz Richard, who held it by service of one knight's fee. This Roger has been supposed to have been the first builder, and to him the exterior works of the edifice have been ascribed.*

The manor continued in this family until the reign of Edward II. At this time surnames appear to have been introduced, and so, John Fitz Richard, the then possessor, took the name of John de Clavering, from the designation of property obtained by the marriage of his ancestor, Roger Fitz Richard, with a daughter of Henry de Essex, Lord of Clavering.

This John de Clavering, having no expectation, as it seems, of male issue, in consideration of a life estate of £400 per annum, made over to the king the reversion of Warkworth and its broad lands, reserving only a life estate in it also. He thus acquired a considerable status for the time, to the chagrin and discomfiture of his next of kin.

King Edward III. in the second year of his reign, 1329, John de Clavering being still living, granted the castle and

* But the facts — that Henry II.'s charter (set out in *Placita de quo warranto*) conveys an *already existing* castle of Werkewrd,—that William the Lion, in marching southwards, in 1174, did not deign to stop there, for “weak was the castle, the wall, and the trench,” and Roger, the son of Richard, a valiant knight, had it in ward but he could not guard it,—and that it is decidedly more advanced in style than the castle of Newcastle (1172-1177) and the Galilee of Durham (1175)—are strongly in favour of a later date for at least the greater portion of the walls and entrances. Mr. Hartshorne's reasons seem to have been written without a reference to the charter of gift, and some time before his description of Prudhoe Castle, which is contradictory to them. The present works cannot be termed *weak*, and may fairly be considered as substituted for the feeble castle granted by the king. It is remarkable that while the conveyance expressly includes the castle, the Croyland record of the Lion's ravages calls it “*Castellum regis de Werkewrda quod Rogerus filius Ricardi custodivit*,” as if the old fabric was still subsisting.

barony of Warkworth to Henry de Percy and his heirs for the accustomed service, in lieu of a fee of 500 marks, which the king had engaged to pay to the said Henry de Percy, during his life, out of his possessions in Berwick.

Then comes the sad story of the revolt of the father of Hotspur, the death of the latter before Shrewsbury, in 1403, and of the former, the first Earl of Northumberland, at Bramham Moor, in 1408. Shortly before this, Warkworth Castle, which appears to have been the principal residence of the Percys, was besieged by the king, reduced, and finally bestowed upon Sir Robert Umfreville, in whose possession it continued until 1415, when it was restored to the son of Hotspur by Henry V., and who fell on the side of the Red rose, at St. Albans, in 1454, "and there lyeth in his grave in our Lady's Chapel of the Abbey Church, with other noblemen in like manner slain."

It would be painful to trace the tangled career of this brave but unfortunate family in further detail. The next owner was killed on the bloody field of Towton, and Warkworth was again confiscated. The next was murdered at Coxlodge. After this, one was beheaded, another shot mysteriously in the Tower, another attainted. Amidst such disasters of those troublous times the eye rests with pleasure upon the page which records the magnificence and splendour of the 5th Earl of Northumberland, who at the marriage of Margaret with the king of the Scots, "for the richness of his coat, and for the costly apparel of his henchmen, and gallant trappers of their horses exceeded all the nobility present, and was esteemed, both of the Scots and Englishmen, more like a prince than a subject." His household book is still in existence, and contains a curious and minute account of his vast establishment.

In 1670 the earldom became extinct on the death of Josceline,* the 11th earl, without male issue, and Warkworth,

* Josceline, the eleventh Earl, married the daughter of the Earl of Southampton, and died at Turin, in 1670, leaving two daughters, Elizabeth and Henrietta, the latter of whom died young.

Elizabeth thus inherited the splendid fortunes and ancient baronies of the family.

She was married three times while a minor. First to Henry Cavendish, Earl of Ogle,—next to Thomas Thynne, Esq., who was assassinated by some ruffians hired by Count Coningsmark, whose object was to marry the widow. Her third husband was the Duke of Somerset, by whom she had seven sons and six daughters.

Algernon Seymour, Duke of Somerset, eldest son of the above, was created Earl of Northumberland, whose only daughter Elizabeth became his heiress in 1744. She was married to Sir Hugh Smithson in 1740.

with the other estates, devolved to Algernon, Duke of Somerset, who was created Baron of Warkworth and Earl of Northumberland, in 1722, with remainder to his son-in-law, Sir Hugh Smithson, who in due course succeeded to the titles and estates, and among the rest to the Castle and Barony of Warkworth, and from whom the present best and noblest of the representatives of the earls of Northumberland is descended.

The further history of the Castle of Warkworth is shortly told. This stronghold of northern power, after its many vicissitudes, appears to have fallen into decay about 1567. In the year 1608 the lead was removed from the roof of the towers, and in 1672 one Joseph Clarke, whom I have an evil antiquarian pleasure in calling an unjust steward, obtained a gift of the materials of the Keep from the then Countess of Northumberland, and carried off the lead and timber by "draughts" supplied to him by his order, by her "ladi-shipp's tenants in Warkworth and elsewhere" to build his house at Chenton.*

But we must now proceed to make a closer inspection.

He amongst us who can remember his first introduction to the wonders of Warkworth will remember also, I doubt not, that he lost no time in climbing to the postern gate, before whose gloomy entrance and around whose hoary precincts it is, that the greatest of our poets has laid the scene of a drama of world-wide renown.

On entering within the quadrangle, the eye is at once arrested by the vastness of the remains—in front, the traces of an unfinished church with its cryptal arches—on the left the donjon Keep frowning sternly over the scene—on the right the Lion Tower with its strange heraldic monsters, and further on, the principal entrance to the fortress with its still easily traceable moat, and portcullis and machicolations, and above all, with its grotesque old-world-like corbels, grinning hardly and savagely beneath the battered moulding. Oh! if we could but mesmerize stones! If we could by some "cantrip slight" make those old heads give utterance—if only those dry lips had language, what questions they could answer, what stories they could reveal—what whisperings

* "In regard they are like to be out three days ere they gett home, I shall be content to allow every wayne half a crowne, and let me know who refuse to do me they"

Newcastle, 27 April, 1672.

"To my loving friend William Milbourne, at his house at Birlinge."

they would tell of beneath the shadow of that archway, "in piping times of peace,"—whisperings of warm hearts now cold and pulseless—of what deaths, dreary desolate deaths, and groans and miseries they would tell, what time the Percy rode forth, perforce, to slay and to subdue, instead of, as now, to comfort and to bless.

The outside walls and towers, including the principal entrance, which you will not fail to examine in detail, noticing among other things its peculiar buttresses, are for the most part considered to be the earliest portions of this mass of masonry—

"this worm-eaten hold of ragged stone,"

Although built at a later period than the Keep, it will answer our purpose best to consider next in order the Lion Tower, whose mutilated blazonings of Percy and Lucy and Herbert read us a mournful lesson of the short-lived endurance of man in his best estate. Casting your eyes upwards from the fragment of the grim Lion, "verie workmanlie wrought," which has given a name to this tower, under the moulding, over the escutcheon to the right, you will observe a curious emblem, which Mr. Longstaffe, in his elaborate treatise on the "old heraldry of the Percys," has been the first to explain. The figure until lately was supposed to represent a pilgrim's purse, and to be a clumsy pun perhaps upon the family name. Mr. Longstaffe, amongst his other researches, has ascertained it to be a "bascule"—a sort of swing used in fortifications and the badge of the house of Herbert. This discovery is the more valuable because it fixes this tower to be the work of the 4th Earl of Northumberland, *i. e.*, not earlier than 1461, nor later than 1489.

Before taking leave of the Lion tower, I may state, that what is believed to have been the baptismal font of the castle chapel is now placed within the ruin. Beneath its shadow you will notice also a huge round blue stone, to which there attaches a story which it may be as well to record.

Years ago, it is said, the custodian of the Castle, dreamed three times, on a certain night, the same dream; which was, that in a part of the enclosure, made known to him in the dream, there lay buried beneath a blue stone, an untold treasure. This miraculous revelation he had not the wit to keep to himself, and in an unlucky hour he told the whole to a neighbour, stating, at the same time, that his faith was such, that he would take the first opportunity

of investigating the precincts in question. He found to his grief, the truth of the proverb, "that it is the early bird that catches the first worm"—for, on his setting forth one morning, in his own dilatory fashion, after the procrastination of a day or two, he discovered to his surprise, as also to his dismay, that a deep trench had been dug where he was intending to burrow, and that, whatever may have lain there, had been abstracted. One thing loomed dark and mysterious above the ground, which he had not before noticed—the dark blue round stone, which now so innocently reposes beneath the shadow of the Lion tower. It is stated that the family of the early bird became suddenly rich, and that years afterwards, a capacious kettle was fished out of the Coquet which had once evidently pertained to the castle, and which it is supposed had held, whilst under the protection of that blue stone, I know not what of golden pieces, the buried god-send of which the early bird became the fortunate possessor.

The Keep—"a marvellous proper donjon of eight towres joyned in one house together,"—rebuilt upon the site of an earlier one by the son of Hotspur, the second Earl, between the years 1415 and 1454, will next demand our notice, and has been, by competent judges, considered to be a perfect model of architectural skill.

Externally, one cannot but regret the necessity which, some years ago, required the removal of a large portion of the weather-beaten old stone work and the substitution of new facings of ashlar. This new cloth upon an old garment detracts hugely from its romance to a fastidious eye. However, admitted to the interior, we are soon appeased. The lordly dining hall—the butteries—the kitchen with its vast chimney spaces—the chapel—the impluvium, which the ancient survey calls "a lantern which both receyveth the water from divers spouts off the lead, and hath conveyance for the same, and also giveth light to certain lodgings in some parts"—the dungeons, one of which is so constructed as to be a trap and a pitfall under a state of siege—and in their turn, the apartments of the ladies where rusty nails here and there still indicate that the walls have been adorned with tapestry—the rooms which the Duke of Northumberland has fitted up with tapestry and furniture of antique mould—all these will, in their course, arrest attention. You will pronounce, I feel assured, that it would require days to take your fill even here, and you will reluctantly return into the courtyard, where other remains of the building await your inspection.

I may first mention the unfinished traces of a collegiate church. It is not known for certain who of the Lords of Warkworth was the founder of this work, but only that its date is later than the other parts which I have briefly attempted to describe. Masons' marks may be traced on every stone in these cryptal arches, and imperfect guides though they be, they are worth observing. They do not identify themselves, so far as I can decide, with any of those in the dungeons or keep, where such marks abound, nor yet with those of the south aisle, or porch of the church, which are both of the perpendicular era, and, without doubt, the munificent gifts of a Percy.

Passing under the postern arch by which you entered, and puzzling yourself meanwhile to derive the name "Cradyfergus," which is given to the south-eastern quarter, you will hurry towards "myn Armytage belded in a rock of stone within my Parke of Warkworth," down the steep bank of the castle, between old old thorns, in spring time one mass of redolent snow, and at a landing place near by, you will find a boat awaiting your latest leisure.*

And whilst our pilgrim is embarking for his short voyage among stony shallows, and anon, between green flaggy banks, deeply reflected in soft flowing water, he may be told that here it was that a predecessor of mine, about the year 1634, Vicar of Warkworth, and as such possibly inheriting many privileges of its hermit, made his claim, in person, from the lessees of the fishery of the day, for his "Satturdaie troutes." The claim was at once acknowledged and the fish counted out. But upon his proceeding to remove them, "Crawford, a lessee, struggled with him and threwe him downe, and gave him two strookes on the face with his hand, which made his face blede, and shaked him by the beard, and he layed on still upon his bodye until one Finche pulled him off."

But Crawford received his deserts. He was adjudged "to make publique acknowledgment of his wrong done to the vicar, in the parish church of Warkworth, on some Sondaie forenoon, in time of divine service, in his usual apparell."†

* "The Parke of Warkworth lyeth on the west parte of the castell, within one half myle of the same, well replenished with fallow deere, which for the most part lye out of the parke, in great wasts, overgrown with furzes and whynnes, by reason that the pale ys not well mayntened, and the parke ys well replenyshed with tymber and ys in compas one myle and a half."—*Humbertson's and Hall's Survey*.

† The Vicar above mentioned, John Heslehead, held office at the time of the rebellion. "He was turned out of his church by violence when he was

Whilst speaking on the subject of trouts, I may remark that within human memory the Coquet was a productive salmon river.

This fish is now but rarely captured in our tempting stream. Its place has been usurped by the "eriox" or "bull trout," with which the river abounds. Recent investigations have shewn that "*Salmo salar*" and "*Salmo eriox*" do not accord—in other words that the true salmon is not found in any abundance in the same waters as the bull trout.

But by this time you will be crossing the "Trinetyedraught" of Coquet, where the hermit each "Sondaie" had his weekly hawl, and on landing, a few paces will disclose to you the far-famed Hermitage of Warkworth.

This venerable relic of the days of old has been so frequently and so well described by others that I need not trespass upon your time by a lengthened notice. Your attention will be drawn to the mutilated and weather-beaten piece of rude sculpture above the entrance door, and I shall not allow you to forget the quaint little porch with its mouldering records of stone seats for two, where doubtless it was that the hermit mused on "man's weak hapless state," when—

"Loud the sea was heard to dash
Against the distant shore."

Even in the days of Grose, the said sculpture must have borne few traces of its original design, for in his careful work the emblem there represented is called a "gauntlet, and probably the arms of the founder." It is now ascertained to be a "rod."

Proceeding inwards, you will, I feel assured, try to decypher the faded inscription above your head; *Fuerunt mihi lacrymæ meæ panes nocte ac die*, "Tears have been my meat day and night," reminding one most forcibly of the deathless words of the poet over portals whose entrance becomes an end of hope for ever. Your eye will rest next upon the altar with its five crosses, and upon the recess in the rock wall above, which once contained the pyx. You will scan well also, the careful groining, picked so deftly and with such labour, from out the living stone. And then, with thoughts subdued and

preaching, and his family soon after thrown out of the vicarage house; his daughter, who was near her delivery, not being permitted to lie in there. He thereupon, hired a house in the town, but he was not suffered to dwell in it quietly, his successor, Mr. Archibald Moore, being one of the chief that threatened to ruin him if he staid in the parish." He outlived this lawless and turbulent period, and was restored to his rights in 1660.

solemn, and not unmixed with wonder at the strange changes which a few generations have made, you will pass on to the so-called confessional,* with its second altar and hagioscope, and dilapidated but most graceful window. You must stay to examine as you pass the shield over the doorway, between the chapel and the confessional, which contains, distinctly traceable, the emblems of the passion of our Blessed Lord—"the cross, the crown, the spear," and, I may add, the nails and sponge.

The third apartment is supposed to have been the dormitory of the hermit. From the railing which crosses the rock at this point, and where may once have been the chief entrance, you will look down upon the remains of a residence to all appearance of later date, whose owners probably took a brighter view of mundane affairs than the solitary who may have first secluded himself amidst these pleasant shades. Here it was, no doubt, that the produce of the "Sondaie haul" of "Trinetye draught" aforesaid, was cooked and feasted on, and other things besides the esculents of the hermit's garden, to which, on leaving the Hermitage, I shall invite you to clamber.

After a somewhat hasty survey you will, I know, come back to linger longest of all before a little window in the chapel on the south of the altar, where a stone figure with upraised hand for ever prays before an unsightly stone lady, whose feet for ever rest by the side of an equally unsightly bull's head.

The genius of the poet has clothed these time-worn figures with the garments of high romance. The lady was a Widdrington, as the symbol of the bull's head indicates—the hermit was a Bertram of Bothal, an early friend of the father of Hotspur.

Alas! for poesy—alas! for all our cherished fancies. There may be after all no more truth in the story of the Hermit of Warkworth as sung in one of the most graceful of our poems, than there is in the legend of the "seven sleepers," who continue their gaunt and stark repose among the weird recesses of rock-based Dunstanborough.

It has been disputed whether the bull's head is more or less than the common effigy of a dog, the emblem of fidelity. Besides, it has been said that the foot is not the probable place for a crest,† the usual position of which is stated to be

* This room occupies the precise place of hermitages in parish churches.

† Crests were usually under the head of male figures and wanting in the

at the head of a figure. Some observers have gone so far as to assert that the recumbent image is that of the Blessed Virgin, but this cannot be maintained. Mr Hartshorne conjectures that the Hermitage was founded by the second Lord of Warkworth, in memory of his wife Mary Plantagenet, whom he sorrowingly survived, and who was buried by her side in Alnwick Abbey in the year 1368. He adduces architectural reasons, and also the improbability of the story of the poem in support of this opinion. To this, however, an apologist for the poem might reply, that this second master of Warkworth does not seem to have lamented his loss for any lengthened period, certainly not long enough for the hewing of this Hermitage out of a rock.

The noble lady died on the 1st September 1362. Her husband died as I have said in 1368, but in this brief interval he contracted a second marriage and had a son and a daughter.

Then as to the evidence from the architecture. A reference to the poem shews that the bishop and Mr Hartshorne both fix the period of the foundation of the Hermitage at the same or nearly the same date, their only difference being as to the founder and the occasion of such foundation.

The poem makes the visit of Hotspur's son to the hermit ten years after the battle of Shrewsbury, or in the year 1413. At this period the perpendicular had doubtless taken the place of the decorated style of architecture, and so, as Mr Hartshorne justly notices, it must have been considerably before this that the graceful window of the Hermitage confessional was carved out of the natural rock. But the hermit of the poem tells us that—

“*Full fifty* winters all forlorn
My life I've lingered here—
And daily o'er this sculptured saint
I drop the pensive tear.”

Fifty years from 1413 will bring us to 1363, which does not disagree with the style of architecture, and places us moreover in the period of the second Lord of Warkworth, who is supposed by Mr Hartshorne to have been the founder, and who may after all, therefore, have granted this retired and quiet spot to Bertram of Bothal for “penitence and prayer.”

Mr Longstaffe, in the treatise before mentioned, suggests

effigies of females, except in the later perpendicular period, when, at least, the cognizances of families are not uncommon at the feet of ladies. But no rule is applicable to so anomalous an example as this.

that the effigy may represent Margaret Neville,* the mother of Hotspur, and wife of the first earl, who fell at Bramham Moor. But this conjecture brings the date of the window to 1372, with which its style, without a certain amount of licence, I am anxious to persuade myself, does not appear to synchronize.

Amidst so many conflicts of opinion let us for one day more at least believe in the poem. Let that battered figure for this day at least be indeed the hermit Bertram, symbolizing, until the very stones shall perish, a bootless bene,† a sorrow too deep for tears,—and let that recumbent effigy be indeed the maid of Widdrington, his own best beloved, whom unwittingly he slew.

And may I not almost venture to say that even should we succeed in disproving the whole story, there will yet come forth believingly the pilgrim to Bertram's altar for many a rolling year, and the old song shall after all secure more converts, and draw out more human sympathy, than the hard, and sometimes ruthless verities of antiquarian research.

After a peep into the hermit's garden, and, I wish I could say, a draught of pure water from his well, you will enter upon your short return voyage, and, if the day be favourable, you will not fail to admire the truly beautiful reflections of the castle in the smooth and gently gliding river.

Our visitor's antiquarian toil is not yet over, for there still remains for inspection a venerable and interesting church.

I have already occupied so much of your time that I shall forbear entering into any details at present respecting this curious building. Suffice it to say, that within my memory it was a brave old specimen of high pews and galleries and whitewash, and whatever else the taste of the last century thought fit to approve; but that during the last three years, the liberality of my parishioners, and the kind help on all hands tendered to me, not grudgingly nor of necessity, have enabled me, assisted by competent guides, to make it such as it now is. Church restorations are sometimes cruel onslaughts upon all which we antiquarianly most worship. I trust you will at least give me this credit, that I have carefully endeavoured to retain whatever of old could be fairly

* Seeing that the bull's head, if the effigy relates to a Percy's wife at all, must be explained by a marriage with Neville.

† What is good for a bootless bene?—(what remains when prayer is unavailing?) The foreboding answer of the trembling mother was "endless sorrow."—*Story of the Boy of Egremont*.

ascertained, and that I have allowed to be introduced nothing of new for which condonation may not be granted.

Leaving you to make your own observations upon the church exteriorly and interiorly, and gladly offering any information upon the spot which I may be able to render, I shall mention but one or two things respecting it to direct your inspection.

I have stated that a church is recorded as being in existence here in 737, and that Ceolwulph, king of Northumberland, gave it to the monks of Lindisfarne when he entered that monastery.

In our restoration work we found a quantity of Norman remains, corbels, mouldings, &c., but no trace of Ceolwulph's pious toil, until, one day, an undoubted Saxon relic presented itself which you will find in the chancel.

Thus stimulated, we were of course on the alert to find other traces of a similar description, and it was not long before our watchings were rewarded by the discovery of what I believe to be the veritable ruins of the church of Ceolwulph. These curious remains lie buried low near the chancel arch, and consist of the angles of a building with a south wall running some distance westward. A huge stone rested upon the south-eastern corner of this wall, which on being raised, disclosed in the block beneath it, a longitudinal cavity. It may be imagined with what eagerness we dived into this treasure hole in the expectation of finding coins or other remembrancers of Ceolwulph himself. But here again an early bird had preceded us many a long year. It is every way probable that the Norman builders had been before us, as we found that they had monopolized the stones of this ancient structure as far as they were available, for the foundation of their chancel.

In the chancel you will find, as I have stated, the curious Saxon fragment, containing a rude cross with knot work on both sides ; and also on the wall near to it, the few letters of a most puzzling incised inscription which I brought to light beneath the panelling, and which I have caused to be carefully preserved.

The vestry, which is worth inspecting, has at some time, probably during the Early English period, been added to the north side of the chancel, and was in all likelihood the habitat of an anchorite. Here, in the west wall, I opened out a curious window which may have been used as a confessional.

The porch, also, is an afterthought, apparently, to the south

aisle. The room above is remarkable as having been, until within the last 70 years, the village school.

I must not omit to tell you, that in the south-west corner of the south aisle, there is a cross-legged effigy professing to be the "effigies of Sir Hugh de Morwick who gave the common to this towne of Warkworth."

As to the authenticity of this figure, I entertain, for many reasons which it would be tedious to enumerate, the gravest heresies. I fear, were we to enter into the subject too closely, we should be as deeply quagmired as to this speechless stone mystery, as I shudder to think it possible we might be in the matter of our hermitage romance.

But in this also, for one day more at least, let ignorance be bliss, and let us choose rather to revel among the traditions of the days of yore, than pryingly to dig out the anachronisms of such unquestionably old memorials.

It remains only further for me to observe in respect to this fine church, that in the year 1174, on the occasion of the disastrous and murderous invasion of England, by William the Lion of Scotland, a division of his army under Earl Duncan, burnt Warkworth, mercilessly maimed three priests and put to death more than 100—another account says 300—men besides women and children who had taken refuge within the church of St. Lawrence, and in the house of the clergyman of that vill.* The excessive number of human bones which

* "Comes vero Dunecanus statim exercitum illum in tres partes divisit: unam secum retinuit.—Et ipse cum parte exercitus quam sibi elegit, intravit villam de Werkewrd et eam combussit, et interfecit in ea omnes quos invenit, viros et mulieres, magnos et parvos; et fecit satellites suos frangere *ecclesiam sancti Laurentii*, quæ ibi erat, et interficere in ea et in domo clerici villæ illius plusquam centum viros, præter mulieres et parvulos." (Benedict. Petroburg. Croyland Abbey transmitted to Edward I. a similar account.)

"Let us allow our SCOTS to waste the SEA-COAST,
Woe to them if they leave standing a house or a church ;

* * * * *

It was Thursday evening that the king spoke
And Frenchmen and Flemings agreed to his words.
Friday in the morning his trumpet was sounded :
This great host departed and his fierce baronage,
And came to Alnwick, they did not delay longer ;
But the Scors burnt and wasted the country.
The church of Saint Laurence was that day violated,
Three priests in the church were by force emasculated,
And three hundred men murdered, without a word of falsehood."

(Jordan Fantosme.) The two chronicles must be read together, with a seasoning of local knowledge, which will prevent the reader from confusing the church of St. Laurence with Alnwick. The number of 300 probably includes the women and children excluded in that of 100.

were found in a state of great decay during the progress of our work inside the building, gives ample credence to the chronicler who so graphically tells the sad tale, and who points his moral by remarking upon the rapid retribution which overtook the author of this sacrilege and slaughter, and how the saint was speedily—nay that very day—avenged beneath the princely walls of Alnwick.

The architecture of the most ancient part of the church is late Norman, and, taking this fact in connection with the event above related—with the threat recorded by Fantosme if a church on the sea-coast were left standing—with the circumstance that the church of St. Lawrence at Warkworth was the first attempted—and lastly, with the necessity which would demand a re-consecration after such bloodshed in a place so sacred—it seems highly probable that after this terrible carnage within its walls, the church was rebuilt, and therefore, that an earlier church, possibly the old Saxon fabric—after four centuries of such havoc and unrest, it may be, tottering to its fall—was the one thus basely desecrated.

For this opinion I am indebted to the suggestions of Mr Longstaffe, to whom I already owe so much. He remarks how characteristic of that experimental period the singular and perhaps unique decoration of the chancel arch is, and that while the general feeling of the building is transitional, none of the details common to an earlier date are inconsistent with that assigned. The cotemporary castle of Newcastle is quite in point, and the piers of the chancel of Warkworth are identical with piers at Monkwearmouth, which accompany nave piers of decidedly transitional work. These piers, he observes further, are almost the same as those of the remarkable chancel arch at Lanchester, (engraved in Billings's Durham,) the ornament on the abaci of which blends so curiously with that of the pointed arches adjacent.

We may consequently, I think, fairly conclude, that the date of the beautiful chancel and nave of Warkworth ranges from 1175 downwards.

With respect to Warkworth itself it may be well imagined that in a locality until recently so remote, many old customs have kept their stand and many old prejudices have been retained. For the present I shall confine myself to the mention of one curious observance, which, so far as the name given to it is concerned, is fast passing into oblivion and in consequence is worth recording.

At the season of the new year, as in other places, much

hospitality goes on, and amongst many demonstrations of this nature, in each house of the more well-to-do inhabitants, there is provided a rich cake with its usual accompaniment of wine. Great interchange of visiting takes place, and cake and wine are liberally, but with some formality consumed.

I am aware that this new-year openheartedness prevails more or less in most parts of England, but I am disposed to think that the name applied to it in this district is singular. It is called "fadging," or "eating fadge."

"To fadge" is an obsolete word signifying to suit, to fit, or to agree. Shakspeare uses it in this sense in the "Twelfth Night, Act II., sc. ii." He says—"How will this fadge." Butler uses the word in a similar manner.

"Fadge" in Scotland is used for an especial kind of company cake, and I should suppose has its origin in the same root.

"Fadging" therefore, I am fain to believe, really means eating the bread of brotherly union and concord.

And so, when our unthinking villager says to his neighbour at Christmas tide—"Come and fadge with me," it is as much as saying—"Come and break bread with me and taste wine, in token that bygones shall be bygones, and that if ought has occurred during the year that has passed from us to disturb our peace, it must be at once and for ever forgotten."

But here I must cease.

When I remember me, that you are to tread to-day on old battle fields, and by holy shrines consecrated by the tears and penitence of an earlier age—that you will stand admiringly before ragged walls which our Shakspeare has made sacred by undying song, and which our Turners and Richardsons have essayed to realize by the limner's art,—when I think on all this and more which I could tell—it seems a high presumption to have detained you so long by my imperfect notices.

I have only the more to thank you for the kind attention which you have paid me.

PLATE I.

Ground plan of Warkworth Castle.

PLATE II.

Interior View of Warkworth Hermitage. (This plate has been presented to the club by Mr John Storey, artist.)

Syrrhaptes Paradoxus—*Three-toed or Pallas Sand Grouse*.
By ROBERT EMBLETON, Surgeon.

THIS hitherto rare visitant, has this year been met with, from Cornwall to Northumberland, in flocks from 10 to 20; the cause of their migration in such numbers is difficult to account for. In 1860 they were observed in England for the first time, but only in two localities. In the deserts bordering the Caspian and Oral Seas, they are found in immense numbers; and in China they are equally abundant. The specimens in the Gardens of the Zoological Society of London, were brought from China, by the Hon. J. F. Stuart Wortley, on the return of Lord Elgin's embassy; all attempts to propagate the species in this country, have hitherto failed. The specimen I now exhibit, was one of a flock of 14, which have been in my neighbourhood for several days, and are still there, but very difficult to approach. Another specimen belonging to another covey of 10, was captured alive by Mr Fordy, of Tuggal Mill, apparently exhausted from the loss of blood, caused by a parasitic insect on the back of the neck, and which resembled most closely the *Goniodes chelicornis* of Denny's monograph. The feet are small, and the hind toe wanting. The front toes are united together, and form a broad flat foot, the sole of which is thickly covered with strong horny papillæ, and terminate in broad and flattened nails. Their food seems chiefly to consist of the seeds of the genus *Plantago*; in China the millet fields are their usual haunt.

Miscellanea Zoologica et Botanica. By ROBERT EMBLETON,
Surgeon.

ECHINUS NEGLECTUS. *Silky spined Egg Urchin*. Forbes' Brit. Echinodermata, p. 172. This addition to our list of this class, was dredged in Holy Island Bay during this summer, in considerable numbers by two gentlemen from Newcastle.

ESCHARA LANDSBOROUGHII. The species which in a former number of our transactions, is named *E. foliacea*, has been determined by Mr Alder, of Newcastle, to be a new addition to our Fauna, and he has named it after the Rev. Mr Landsborough, so well known in this department. The specimen is now in the Newcastle Museum.

OROBANCHE MINOR. *Lesser Broom Rape.* From Mr John Chrisp, of Buston Barns, I received a number of beautiful specimens of this addition to our local Flora. He found it plentifully in a field between Lesbury and Warkworth.

ASPIDIUM LONCHITIS. *Rough Alpine Shield Fern.* By the side of an embankment in the North Eastern Railway, I gathered this rare and Alpine species, both in its immature and perfect states. Inhabiting the highest parts of our Scotch and Welsh mountains, it is difficult to account for its present habitat. To describe its exact locality, would only ensure its speedy destruction.

The past summer, has been in many respects, a peculiar one. In this immediate locality, our summer visitants were much later in making their appearance, and in very much smaller numbers. The Swallows were ten days later than I have noticed for the last twenty years, and in number scarcely one half of last year. The Sand Martins, which breed in considerable numbers along our banks, were limited this year to three or four pair; and not a single Swift was observed. From the numerous observations made in all parts of the kingdom, this seems to have been general. The almost total absence of Butterflies, has been very remarkable; not above six specimens of the Lesser White Butterfly has been observed in my garden during the whole summer, and about the same number of the common Nettle Butterfly, and not a single specimen of the Red Admiral, Painted Lady, Small Copper, or Large Cabbage, has been taken. This seems to have been so generally, if I may judge from my own observations, made in different parts. In a tour through the Lake District, I did not see above one or two species, although during all the time there was scarcely ever a cloud to be seen. In a visit to Buxton and other parts of Derbyshire, the same occurred; and during a visit of some days, amidst the beautiful scenery of Bolton Abbey in Yorkshire, not more than three specimens were seen; and the same remark may be applied to Buckingham and Hertfordshires. Very few Wasps, Humble Bees, or Moths have been observed. A few specimens of the Sand Grouse, still linger in this neighbourhood; whether they will survive the winter, or rather be allowed to do so, remains to be seen. Woodcocks are very early this year.

Beadnell, October, 1863.

Notice of a Cist found near Dunse. By WM. STEVENSON.

IN July last, whilst excavating gravel for ballast on the line of the Berwickshire Railway, near Grueldykes, (about half a mile from Dunse Station,) the workmen displaced the head slab of a Cist, exposing a full view of the interior. Mr Prodham, one of the contractors, was fortunately present at the time. He immediately stopped further operations and walked to Dunse, calling upon Dr M^cWatt, (one of our members,) and the writer of this notice, who at once returned with him to the spot. We found inside the Cist the perfect skeleton of an adult male, apparently of middle age and of medium height, (say 5 feet 8.) The teeth as well as all the bones were beautifully preserved. The dimensions of the Cist, which was formed of sandstone slabs from the neighbourhood, placed in the usual manner, were 4 feet long by 18 inches wide and 20 inches deep, the body having been deposited in the customary bent position with the head to the west. An urn was found near the left shoulder, broken apparently at the time of sepulture, and showing no appearance of having ever contained anything. No weapons nor other relics were to be seen. The position of the Cist was about 2 feet below the surface of a flattish gravel knoll, which has been under the plough for a long period. There was not the slightest appearance of its having been previously disturbed. The urn shews the ordinary incised zigzag style of marking, differing however a little in the pattern from some others which have been found in the district within the last 30 years. May not this, as well as the facts of the integrity of the skeleton, and the empty broken urn, have a significance well understood, doubtless, by the aboriginal inhabitants of this part of our island, but the translation of which will require much pains and labour from skilful and accomplished antiquaries? The cranium, a femur, a tooth, and the remains of the urn have been deposited in the Museum of the Royal Scottish Antiquarian Society in Edinburgh.

Wark Castle. By Rev. PETER MEARNS.

It is not intended that I should give in this paper a full history of the Castle of Wark. Such a narrative would embrace the principal events of Border history in the five centuries during which this ancient fortification was in its glory. The duty devolved on me by the club is much less important. It is meant that I should give the merest glance at the events connected historically with the castle, embracing little more than an enumeration of them; and more particularly describe the existing ruins, in order so far to guide the club in their investigation of them.

We are met beneath the shadow of the Kaim on which the castle stands. This was formerly supposed to form part of the fortification, and to have been raised at an immense expenditure of labour and means by the warlike borderers of the 12th century. But in a paper, read to the club at last meeting, I produced the evidence on which we are entitled to conclude that this is a detrital ridge, belonging to the Drift Period of geology. The club will now have an opportunity of examining the strata, and judging for themselves. The ridge contains unquestionable evidence of an antiquity compared with which the most ancient monuments of human skill are but of yesterday. From its summit more than sixty centuries look down on us.

This is not the first meeting of the club in the parish of Carham. On the 6th of May 1840, six of its members met at Cornhill, and, in the words of the president for the year, who was not himself present, "after breakfast the party proceeded to the old tower and village of Wark, where parts of that ancient Border fortress are still standing. On leaving Wark, the members directed their walk for nearly a mile along the river side towards Carham, and met with a few good plants."

Such is the meagre account entered in the club's proceedings, twenty-three years ago, as the result of their inspection of the ruins of one of the most ancient of the Border castles. I trust the members will make a more careful examination of both the castle and the Kaim on which it stands, in their present visit; and I am sure they will be abundantly rewarded for their pains.

Carham is first mentioned in history in 1018, when a great battle was fought here between the Scotch and the English,

which was very disastrous to both parties; but the results were more in favour of the Scotch. It was preceded by a comet, and the deplorable results confirmed the prevailing opinion of the period, that calamitous events ever attended these remarkable stars. No mention is made of the castle, for it was not then built.

The first castle of Wark was erected by Walter Espec, who acquired the parish of Carham by a grant from Henry I., whose reign extended from 1100 to 1135. The precise year of the erection is unknown; but it was probably towards the close of this period. It is distinctly stated by Richard of Hexham, a contemporary writer, that the castle was built by Walter Espec. Carham and Wark are mentioned as belonging to him, in the "*Carta Foundationis Prioratus de Kirkham*," of which the date is circa 1122, and for a copy of which I am indebted to Mr Robert Home of Berwick. The original is among the archives belonging to the Duke of Rutland, but it is quoted in Dugdale's *Monasticon*. I quote the words relating to Carham and Wark, "*Walterus Espec et Adelina uxor ejus dederunt Deo et ecclesiæ S. Trinitatis de Kirkham et canonicis ibidem Deo servientibus consensu Henrici Regis Anglorum, &c., in liberam et perpetuam elemosinam—in Northumberland totam villam de Carram super Tweedam fluvium et ecclesiam ejusdem villæ . . et unam Mansuram in Werch*," &c.

The castle was taken by David I. in 1135, but restored to England in the beginning of 1136. In the end of the following year, David attempted to retake it, but was foiled. In the beginning of the following year, Stephen, who had usurped the crown, and was then acknowledged king of England, came to Wark with a numerous army, and, after ravaging the east of Berwickshire, returned to the south. After the retreat of Stephen, David besieged and took Norham, and was much annoyed during the siege by hostile acts committed by the garrison at Wark. After the fall of Norham, he laid siege to Wark, but failed to take it; and it was reduced only by a lengthened blockade. It remained in possession of Scotland till 1157, when it was restored to England, and rebuilt by the crown, during the four following years, at great expense. At that time the barony of Wark extended from Carham to Warkworth.

The town and castle of Wark were destroyed by fire, in 1216, by King John of England. Wark was honoured by the presence of royalty in 1255, when Henry III. resided here

for some time with his queen; and on that occasion his daughter, the Queen of Scotland, was detained on a visit to her parents in consequence of her mother's illness. Deputies from Edward I. were at Wark, when the Estates of Scotland met at Birgham, and made arrangements for the marriage of the maid of Norway to the Prince of Wales. Sir William Wallace invaded England in 1297, and plundered several parts of Northumberland. There are traditions of his presence at Wark. Edward I. spent Easter here, and hence marched a great army against Scotland. He was here again, four years before his death, on his way to inflict on Scotland the heaviest blow she ever suffered from an invader. Edward II. mustered here his vast army for Bannockburn, where the liberties of Scotland were recovered after they had been endangered by his father. Robert Bruce reduced this castle in 1318. David II. was foiled in his assault on it in 1342. The Order of the Garter appears to have been instituted here by Edward III. in 1349. It was originated by a trifling circumstance in connection with the Countess of Salisbury, by whose charms the king is said to have been powerfully influenced. It was at a court ball in the castle, where were brave warriors, and female beauty, and glad hearts, forgetting for the hour the strife and turmoil and war with which these days were sadly familiar.

The castle underwent various changes from 1383 to 1399. In 1385 it was taken by storm; and on that occasion the Scots obtained possession also of the fortalices of Ford and Cornhill. The Duke of Albany terminated his dishonourable inroad at Wark in 1419. Wm. Halliburton took the castle by surprise in that year, but it was retaken the same year by the English under Sir Robert Ogle—access having been got by a common sewer from the escarpment on the Tweed. In both cases the whole garrison was put to the sword. The sanguinary conflicts of those times, many of them unrecorded, originated the old saying in Northumberland,—

“Auld Wark upon the Tweed
Has been many a man's dead;”

which is intended to intimate that many a brave man has fallen both in assailing and defending this fortification. On this couplet it is remarked in the “Denham Tracts,” that Wark's “prominent position as a Border fortress exposed it to repeated hostilities; and its history from the 12th down to at least the 16th century is perhaps without a parallel for

surprises, assaults, sieges, blockades, surrenders, evacuations, burnings, restorations, slaughters. These quickly recurring events transformed the mount on which the castle stood into a Golgotha, and gave a too truthful origin to the couplet which still occurs on the Borders of the once rival kingdoms.”*

In 1460 the Scots, provoked by the sudden incursions of its garrison, crossed the Tweed, and took the castle; but it was afterwards abandoned by them, and partially repaired by the English—having become more important to them on account of the loss of Roxburgh. It was again demolished by the Scots before the battle of Flodden. It was afterwards repaired by the Earl of Surrey; and well fortified in anticipation of the approach of the Duke of Albany, in 1523. The assault by the duke was at first conducted with much spirit; but it was unsuccessful. David Home of Wedderburn distinguished himself on the occasion. The following extract from a MS. History of the Wedderburn Family, for which I am indebted to David Milne Home, Esq., of Wedderburn, in whose possession the History now is, possesses more than a local interest:—

“David Home was a man of singular bravery, and expert in war; and ever ready to undertake anything for the good of his country, or against the English. And in that expedition, when the nobility refused to cross the river Tweed, and the Regent (*i. e.* Duke of Albany,) was obliged to set down on this side and batter the Castle of Wark, Wedderburn alone, with his attendants, passed the river, and blocking up the entrance to the castle, greatly molested the English. One day, in a skirmish which he had in a valley overlooked by the Fort, he distinguished himself so much, and gave such eminent proofs of valour, that he carried off the highest encomiums from the whole army. After his return, the king, as a reward for his singular services and extraordinary behaviour, gave him permission to carry as his crest, in all time coming, a unicorn’s head, gorged with an imperial crown, being part of the Royal Bearings; and the word ‘Remember’ for his motto; likewise a gold chain, which the king himself had worn.”

George Buchanan, the celebrated historian, carried arms in this expedition, and gives an interesting description of the castle as it then stood. The Queen Regent, in 1557, assem-

* Denham Tracts: Northumberland, p. 126. Richmond, Privately printed, 1858.

bled a large army, and marched to the Border ; but their progress was arrested at Wark, and they returned without accomplishing anything of importance. The Earl of Sussex spent a night in this castle, in 1570, on his way to Teviotdale, where he destroyed more than 50 castles and peles, and about three hundred towns and villages.

After the accession of James VI. to the English crown the Border castles were no longer needed, and soon became ruins.

It appears from the preceding summary that, from the beginning of the 11th century, when the locality came into notice, before the building of the castle, till the end of the 16th century, when it disappears from history, most important events are associated with Wark, during each intervening century. The period embraces the battle of the Standard, where the Scots suffered a defeat, from which they soon recovered, and which was unduly magnified at the time. The battle of Flodden was the most disastrous to Scotland in the whole annals of Border warfare. On the other hand, the battle of Bannockburn was the most humbling to England, and glorious to Scotland, and important in its results to both countries. The greatest event in the whole period was the Scottish Reformation in the 16th century, with which must ever be associated the honoured name of John Knox.

The glory of this once famous castle has now passed away. With the exception of the tower at the south-west corner, there is nothing prominent among the existing ruins. The tower, it is said, rose 120 feet above the Kaim on which it stands, and which is about fifty feet high. It is now so low and accessible that children are often seen at play on its summit. Predicting the peace of Jerusalem, an ancient prophet describes the city as "full of boys and girls playing in the streets thereof."

The foundation of the north wall, which runs along the top of the escarpment on the Tweed, remains to the height of several feet, and the outside facing is seen in several places. The shale of the escarpment is gradually crumbling down, year by year, under the united action of the river and the atmosphere ; and, a few years ago, at a point near the east corner, it had retired from beneath the wall, a portion of which required to be removed, as it had become dangerous to the people crossing at the ferry. From this cause alone, the north wall must fall in the course of years by the all-destroying hand of time. At present it is a most interesting object to the antiquary. It extends to one hundred yards in length.

The east, west, and south walls also can be traced. There are two parallel walls on the west side thirty-four yards apart. The inner is seen for about half its length, and in the excavations made a few years ago, the rest of it was found only a few feet beneath the surface, with a thickness of ten feet. Buildings are discovered all over the enclosed area by digging a few feet down. The Ladies' Walk, along the top of the escarpment on the Tweed, appears to have been enclosed ; but the north wall has been removed by the gradual wasting of the escarpment. In digging the foundation of the new Boat-house (1863) a ditch was found nine feet wide, running south-west from the north-west corner of the wall close by the Tweed, and passing beneath the door of the new house. On the same occasion, a road made of broken stones was found, 8 feet wide, passing from the village, on the north side of the tower, towards the grave-yard at Gilly's Nick. Undoubtedly, excavations, judiciously executed, would lead to other interesting discoveries.

The following account of excavations recently made has been kindly furnished to me by Richard Hodgson, Esq., M.P. :—

“My excavations a few years back resulted in the exposure of a long flight of stone stairs leading from the Keep to the outer court, with a portcullis about half way. This was on the east side of the mound. On the south-west side I discovered a square pit, lined with masonry, about five feet wide, and descending nearly to the base of the mound. At the bottom were a number of cannon balls, of various sizes, and various materials, iron, lead, stone, and some of them lead and flint mixed and cast together. To the north of the castle I traced a wide sewer, which might easily be used for passage of men or material, and opening in the steep river bank. I was unable to find the old well of which tradition speaks.”

Wark is now the property of the Earl of Tankerville, as representing here the ancient family of the Greys.

Notes of the Acts of Parliament relating to the Tweed, with Statistics of the Fisheries. By ROBERT DOUGLAS.

THE earliest legislation for the regulation of the Fisheries in the Tweed, was made by the Scottish parliament in the time of King Robert the Bruce, when an Act was passed "Anent the preservation of Salmonde." Several subsequent Acts were also passed which then, as now, referred to the same sources of contention—the annual close time—the removing of obstructions to the run of the fish, &c. The penalties then imposed were, however, much more severe than they are now, and shew that poaching for salmon was as strong among our ancestors as it is with their descendants; for in the 1st Parliament of James I. of Scotland, it was enacted, "Quha sa ever be convict of slauchter of salmonde in time forbidden be the law, he sall pay fourtie schellings for the unlaw, and at the third time, gif he be convict of sik trespasse, he sall tyne his life or then bye it;" but it is not stated how he was to "bye" or redeem it. This Act was followed by one in 1429, passed in the 9th Parliament of the same king, referring exclusively to the Solway and Tweed, which affords a curious glimpse into the feelings entertained by the Scotch to their English neighbours. To the inveterate poacher it would be a welcome relief to go out to catch the "red fische" without any fear of the above penalty being inflicted upon him, for it enacted, "the waters of Solway and Tweede qu hilikis sal be reddie to all Scottes-men all times of the yier als lang as Berwick and Roxburgh ar in the English mennes handes." After this proviso ceased, the general Act of Parliament for the regulation of the Rivers in Scotland, came again into operation.

The first English Act relating solely to the Tweed, was passed in 1771, and was entitled "An Act for regulating and improving the Fisheries in the River Tweed, and the rivers and streams running into the same, and also within the mouth or entrance of the said river." And in the years 1775, 1797, and 1807, Acts were passed amending and rendering more effectual the first Tweed Act. The reasons given for passing these various Acts, as set out in the preambles, are interesting. For that of 1775 it states "that the provisions and regulations contained in the Act of 1771, had proved very beneficial to the owners and proprietors of Fisheries, and had greatly contributed to the preservation of the fish;" for that of 1797, that idle and disorderly persons made

a practice of fishing for salmon, &c., within the mouth of the river, and by setting of bob-nets and other nets therein did intercept and obstruct the free progress of the fish, (which at certain seasons of the year are known to make in shoals to the fresh water,) and by such means drawing many of them from the coast to the detriment of the proprietors thereof; and for that of 1807, "that it had been found by experience, that the penalties for killing fish within the periods prohibited by the said Acts had, from the *increased price of fish*, become totally inadequate to the purpose intended, and it was therefore expedient that the amount of the penalties should be increased." These Acts continued in force until 1830, when the Act, which was recently repealed, was passed. The preamble states, "that it had been found by experience that the said Acts had become inadequate to the purposes intended, and that for several years past the salmon had rapidly decreased, and there is every reason to apprehend that a progressive decrease would continue to take place unless effectual measures be resorted to for the preservation of the breed of salmon;" and in 1836 an amendment Act was passed for the same repeated reason, "the great decrease in the value of the Salmon Fisheries."

These Acts were repealed in 1857, when the present Act was passed, and by it, and the amendment Act passed in 1859, the Tweed is now regulated. The principal alterations and improvements contained in these may be shortly stated to be the following, which were keenly opposed by the lower or commercial proprietors of Fisheries against the upper or rod-fishing proprietors, at an expense to both sides of not less than £7000:—

"The entire abolition of bag, stake, and other fixed nets of every description in the river, and the restriction and regulation of stake nets on the sea coasts.

"The entire prohibition of leistering.

"A slight increase of the weekly close time, which is now from 6 o'clock on the Saturday night to 6 o'clock on the Monday morning, and an increase of the annual close time for nets by 4 weeks, which is now from the 15th September to the 15th February.

"The extension of rod-fishing for a longer period, which is now allowed the whole year, except from the 1st December to 1st February.

"And the absolute prohibition of killing unclean fish

(except trout by the rod,) at any time of the year, and that all such fish should be returned to the water.”

In 1812 the rental of the fisheries in the Tweed amounted to £20,000, but it gradually diminished down to £4,000. It is now, however, again increasing, chiefly from the large rents paid for the right of rod-fishing in the upper waters. The proprietors are charged, upon their rental, with a tax of £20 per cent., principally expended in the protection of the fish during the annual close time; and in addition they have voluntarily paid, for some years past, £10 per cent. for the better carrying out the same object.

Owing to these measures, it is now confidently anticipated that the number of the fish will be much increased, and the Tweed regain its former prosperity.

The following Table, kindly furnished by Mr Paulin, the manager of the Berwick Shipping Company, shewing the number of Fish caught in the Tweed, is from the earliest date at which a regular account has been kept; and it is the more interesting, when it is considered that a radical alteration in the law regulating the times and modes of fishing has so recently taken place, and it will hereafter enable us to judge whether any improvement in the production and take of the fish has thereby been effected, and if so, to what extent. In doing so, however, it must be kept in mind that four weeks of the best of the net-fishing season, particularly for salmon, was taken away by the Acts of 1857 and 1859, and added to the annual close time.

Estimated Annual Produce of the Salmon Fisheries in the River Tweed.

YEAR.	SALMON.	GRILSE.	TROUT.	YEAR.	SALMON.	GRILSE.	TROUT.
1808	37,333	25,324	21,033	1817	36,199	66,694	37,131
1809	30,949	32,679	21,402	1818	39,267	59,848	37,346
1810	40,782	49,332	23,963	1819	31,895	71,813	47,386
1811	38,566	24,852	12,439	1820	28,288	116,495	61,454
1812	27,711	82,538	33,604	1821	34,657	55,291	61,339
1813	35,273	61,643	36,319	1822	25,250	47,266	70,413
1814	58,890	73,521	34,161	1823	12,122	50,794	49,934
1815	41,044	97,734	39,653	1824	23,664	73,381	71,161
1816	54,041	120,594	62,074	1825	18,957	61,506	59,531

Rain Gauge at Fallodon Station.

YEAR.	SALMON.	GRILSE.	TROUT.	YEAR.	SALMON.	GRILSE.	TROUT.
1826	12,040	85,378	59,203	1845	18,962	69,752	54,355
1827	10,725	54,034	43,441	1846	17,878	37,506	38,679
1828	13,511	39,248	39,563	1847	9,032	53,075	67,796
1829	5,350	34,773	64,630	1848	9,478	97,102	52,541
1830	7,415	66,529	37,486	1849	11,484	59,405	39,435
1831	13,197	43,244	77,037	1850	9,522	33,864	49,701
1832	9,709	41,411	77,308	1851	8,789	16,855	45,326
1833	10,428	93,939	60,178	1852	5,888	28,902	24,773
1834	16,106	59,262	48,852	1853	9,199	43,075	37,341
1835	22,642	87,707	82,229	1854	15,299	16,739	32,645
1836	16,957	34,846	63,616	1855	6,329	13,952	23,736
1837	14,577	60,429	57,426	1856	4,885	33,992	30,597
1838	12,785	78,577	40,876	1857	11,475	46,553	31,846
1839	15,508	35,449	56,124	1858	14,614	23,590	41,059
1840	10,920	52,117	56,342	1859	12,273	13,952	35,081
1841	16,464	71,254	64,672	1860	8,940	20,323	26,052
1842	19,198	109,935	76,071	1861	5,379	15,036	28,607
1843	17,777	66,293	54,209	1862	8,467	25,042	20,988
1844	21,830	88,003	99,256	1863	11,053	26,239	23,751

Rain Gauge kept at Fallodon Station. By Mr A. AITKEN,
 Station Master. $\frac{1 \text{ inch.}}{100 \text{ pts.}}$

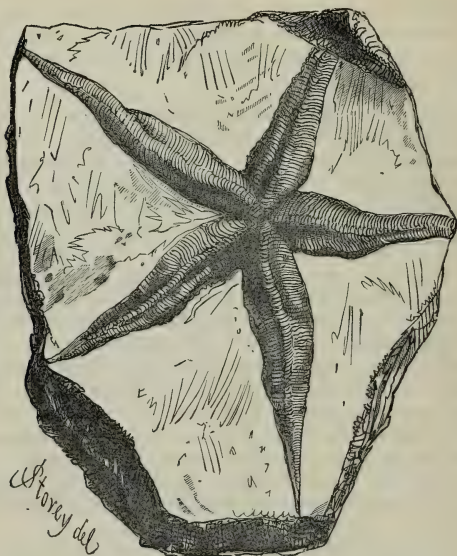
	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	in. pts.
JAN.	3.00	2.00	1.00	2.70	2.17	0.55	0.83	3.61	2.95	2.63	1.02	22.46
FEB.	5.10	1.20	1.65	2.00	1.17	0.62	0.80	1.21	2.04	2.52	0.54	18.85
MAR.	1.30	0.40	0.70	0.04	2.03	0.30	1.96	3.52	2.51	2.42	1.44	16.62
APR.	1.45	1.04	0.24	3.01	2.92	1.80	1.54	0.55	1.45	2.00	1.71	17.71
MAY	1.10	2.10	1.77	2.01	1.80	1.73	0.15	1.00	1.54	2.80	1.00	17.90
JUNE	1.16	3.00	5.14	3.21	2.95	2.96	2.24	3.30	2.15	3.05	3.30	32.46
JULY	2.52	2.10	4.43	2.62	1.53	3.66	3.99	1.70	2.25	1.54	0.71	27.05
AUG.	2.40	2.94	2.48	3.36	2.11	3.27	1.34	3.00	2.25	5.83	4.02	33.00
SEP.	3.15	1.40	0.61	4.52	3.99	1.84	1.98	2.80	3.28	1.82	2.80	28.19
OCT.	2.10	1.89	3.00	1.08	1.21	4.39	2.40	2.10	1.32	2.24	1.10	22.83
NOV.	1.20	3.88	1.80	1.79	2.35	3.70	2.11	4.34	4.01	6.55	4.05	35.78
DEC.	2.01	1.19	1.62	3.80	0.25	2.01	2.10	2.20	0.80	3.11	0.99	20.08
	26.49	23.14	24.44	30.14	24.48	26.83	21.44	29.33	26.55	36.51	22.68	

Average of 11 years 26.55.

Description of a Sea Star (Cribellites Carbonarius) from the Mountain Limestone of Northumberland, with a notice of its association with Carboniferous Plants. By GEORGE TATE, F.G.S., &c.

MANY crinoids of the class Echinodermata occur in the mountain limestone formation; and of Echinidæ, belonging to the same class, I have found two species in this formation in Northumberland — *Archæocidaris Uriei* (Flem sp) and *Archæocidaris Nerei*, the former in the middle limestone beds at Howick and Redesdale, and the latter in one of lower limestones at Rugley, near Alnwick. But no species of Asteroidea has as yet been recorded from this formation, either in Northumberland or elsewhere. Recently, however, I recognised one of this family in a block taken, Mr William Wilson informed me, from the first sandstone above the Shilbottle coal. The specimen is an impression of the upper surface only of the organism; and although imperfect, yet, being doubtless a sea star, and the first discovered in the formation, it deserves the attention of Palæontologists. Without the under surface, generic characters cannot be determined; but as the fossil has a considerable resemblance to the genus *Cribella*, I have provisionally named it *CRIBELLITES CARBONARIUS*.

The following characters can be observed:—Rays five, rounded, lanceolate, five times as long as the disc, ridged in the centre, covered with regular longitudinal rows of reticulating tubercles; disc small and tuberculated. The disc is only $\cdot 3$ of an inch in diameter, while the rays are $1\cdot 5$ inch in length. There seems to be a circular depression near the centre of the disc, which may be the impression of the madreporiform nucleus; it has a faint resemblance to the impression of a crinoidal stem; and if this were the case, it would lend support to the view, that the nucleus in sea stars is the analogue of the column of the Encrinite. In the form of the asteroid, and in the characters observable, it is similar to *Cribella rosea*, Muller; but the disc of our fossil is smaller, the rays proportionally longer, and the tubercles much nearer to each other. The yellow micaceous sandstone, from which this asteroid was obtained, is about 20 feet above the Shilbottle Coal, and about 10 feet below the "Eighteen foot Limestone," which is the fifth limestone sill in the mountain limestone of Northumberland; it lies, I estimate, about 600 feet below the base of the millstone grit; and as the forma-



CRINELLITES CARBONARIUS.

(Natural size, from a cast.)

tion is about 3000 feet in thickness, it is in the upper part of this series of beds.

Besides this sand star there occur, in this stratum, *Strophomena crenistria* and the remains of plants. This association is of some interest. Numerous marine organisms in the limestones, and in shales connected with them, belonging to the mountain limestone of Northumberland, abundantly evidence the deposition of such beds under marine conditions; but rarely are marine organisms seen in the sandstones which form a large proportion of this formation in Northumberland. Another sandstone, higher up in the series, appearing in a quarry, exhibits, however, a similar association; it is twenty-three feet in thickness, and has a thin layer one foot thick, which is crowded with *Strophomena crenistria*; but both in

the layers above and those below it, there are many fragments of carboniferous plants of the genera *Sigillaria*, *Lepidodendron*, *Culamites*, *Knorria*, and the *Stigmaria ficoides*. These cases prove, I think, that some of the sandstones of the mountain limestone of Northumberland were deposited in shallow bays of the sea in which marine organisms lived, and into which were drifted plants which grew during the carboniferous era. These facts, however, do not invalidate the conclusion, that coal was formed of plants which grew on the places where coal beds are now found; for even in the Northumberland mountain limestone formation, each coal seam rests on an under-clay, which was the muddy and probably swampy soil on which the carboniferous flora grew; sometimes a limestone with marine fossils overlies a coal seam, but we never find a limestone with marine fossils lying below it.

As even minute facts carefully observed, help to illustrate the geological history of the coal era, I may briefly notice two other beds which show changing conditions during the period of their deposition. At Budle, there is a metamorphosed shale, about 30 feet in thickness, near to the basaltic whin sill, and overlying a limestone. Now, in the under layers of this bed, there are numbers of marine organisms, such as the trilobite *Griffithides Farnensis*, the molluscs, *Eumphalus carbonarius*, *Bellerophon Urii*, *decussatus* and *striatus*, *Leda attenuata*, *Posodonia Becheri*, *Strophomena crenistria*, *Chonetes Hardrensis*, *Lingula squamiformis*, &c.; but, as we ascend upward, a stray fragment of a plant appears mingled with these organisms; one of the plants is an endogenous leaf, on which is the marine annelid *Spirorbis carbonarius*; further upward, the plants increase and the marine organisms decrease; and, in the upper part of the deposit, the marine organisms disappear, and between the layers of shale there are many fragments of carboniferous plants such as *Stigmaria ficoides*, ferns of the genus *Sphenopteris*, *Bechera*, and leaves of endogenous plants.

In Berwickshire, into which the mountain limestone is prolonged in a narrow band along the coast, there is a similar bed, in which occurs the entomostracan *Estheria striata*, var. *Tateiana*. The lower layers contain *Chonetes Hardrensis*, and *Nucula gibbosa*; but, in the upper layers, there are *Sphenopteris Johnstoniana*, *Coniferites verticillatus*, and reed-like stems, on which are species of *Spirorbis*; and, besides these, there are the teeth and scales of *Holoptychius Hib-*

berti. These facts appear to me to shew a change of conditions while the beds were in course of formation ; at first the conditions were unquestionably marine, but from some cause, probably from a gradual alteration of level, and an influx of fresh water, these conditions became estuarine, and afterwards entirely fresh water.

On the Vill, Manor, and Church of Longhoughton, Northumberland, with some curious extracts from the Register of Longhoughton Church. By GEORGE TATE, F.G.S., &c.

FROM the time when William the Conqueror distributed the lands of England among his Norman followers, the Vill and Manor of Longhoughton, or Magna Houghton, formed part of the barony of Alnwick. Little Houghton, or Parva Houghton, was granted by the baron on a military tenure ; for in 1289 it was held from John de Vescy, Baron of Alnwick, by Peter Harrang, by service of one knight's fee and a rent of 13s. 4d. yearly ; but prior to 1346 it had passed into the old Saxon family of Roddam, and continued in its possession till about the middle of last century. No part however of Magna Houghton had been granted away to military tenants, and it was therefore always closely connected with the barony of Alnwick.

The earliest mention of Houghton is in 1147 when Eustace Fitz John, the Lord of Alnwick, by charter gave to Alnwick Abbey, along with other endowments, the church of Lesbury with the chapels of *Howghton* Saint Waleric, and Alnwick, with all their tithes. An inquisition, made in 1289, tells us that John de Vescy died siezed of the Vill of Houton (*cum quadam frussura quæ vocatur le Merum,*) of demesne lands, of bondagia, cotagia, inills, meadows, and pastures, of the yearly value of £92 7s. 4½d. A subsequent inquisition made in 1372, after the death of Henry, the third Lord Percy of Alnwick, gives fuller information of the condition of the Vill and Manor in feudal times ; it states that he held them of the king in chief, but that the manor was ruined and wasted, and of the yearly value in herbage of only 3s. ; of demesne lands, that is lands in the lord's own occupancy and cultivated by him, there were 240 acres, each acre of which was worth 9d. yearly ; there were also 24 acres of meadow, each acre worth 1s. yearly ; and two water mills, one ruined, but the other yielding 100s. yearly. In the same place were 18

bondagia, each rendering yearly to the lord 16s.; but 10 others were desolated and laid waste, and produced only 6s.8d. each. Besides these there were 18 cotagia, each rendering 20d.; and 11 others, which lying waste, yielded only 1s. each for herbage. Perquisites amounting to 3s. 4d. yearly were also derived by the Lord from Halmote—the Hall Meeting, or Manor Court, in which offences against the lord, all common nuisances and differences between the tenants of the manor were tried and determined. This record presents a dark picture of the period when war was almost continually waged along the borders; and it evidences how much property was wasted and destroyed by the ravages of the Scots.

I have used the mediæval Latin terms *bondagia* and *cotagia*, because there are no corresponding English words precisely descriptive of these tenures. The bondagers and cotagers of modern times are an entirely different class from the bondmen and cotmen who enjoyed these tenures; the former are either mere servants or labourers; but the latter were small landowners. Between the *bondagium* and *cotagium* there seems to have been little difference excepting in the extent of the property; each had its dwelling-house, its toft and croft, its parcel of cultivated ground and its right of pasturage over the moor or common; but the *bondagium* had attached to it an husbandland of land, a variable quantity, but which in *Longhoughton* amounted to 30 acres, while the *cotagium* had annexed to it only a selion of land—that is a ridge, a quantity varying from about half an acre to one and a half acres; at *Gateshead* it was only half an acre, but at *Denwick* each *cotagium* had five roods of land.

Originally both bondmen and cotmen belonged to the large class of villans under the feudal system, who were so called probably from the *Vill* in which they usually lived. Their condition was servile, for they were bound to the land, and obliged to work a certain number of days on the lord's demesne in ploughing, reaping, and other agricultural labours, as a kind of payment for the lands which they themselves held. But the condition of the villan—of the bondman and cotman—gradually improved; services at first arbitrary and oppressive became fixed and regular both as to quantity and time; and ultimately they were commuted into a money payment; the villan rose to the dignity of a free man, and common law recognised his title to his land on payment of the customary rents and fines. This change had to a great extent taken place with the *Longhoughton*

bondmen and cotmen at an early period ; for we find that, in the thirteenth century, instead of performing servile work, they paid money rents to the baron. From this class sprung the copyholders, formerly a numerous and important body of small landed proprietors in this county ; they are however now extinct in Longhoughton ; for the whole of the land there, with the exception of three or four small portions allotted for tithes, or for right of common, which was divided about 50 years ago, now belong to the owner of the barony of Alnwick. At what time these copyholders were swept away I know not ; but from a Survey made by royal authority of the possessions of Thomas Percy the 7th Earl of Northumberland, who was attainted as a rebel, we find that in 1569 there were in Longhoughton forty-seven of these copyholds or customary estates ; thirty of them were the old bondagia, each being described as containing a built tenement and a husbandland or thirty acres of arable, meadow, or pasture land with appurtenances, and chargeable with a rent to the lord of 30s. yearly ; seventeen of them were the cotagia, each with a croft or garden and a selion of land, and chargeable with a yearly rent ranging from 2s. 2d. to 3s. 4d. The names of these small proprietors are given in this Survey ; there were six of the name of Adams, five of Elder, five of Clerk, four of Sheppard ; the other names of less frequency are Gibson, Athey, Todd, Grene, Hudson, Dawson, Thew, Selby, Walby, Driver, Waller, Fylbrand, Hodgson, Edgarth, Wilson, Lyghton, Scott, and Patenson. Some descendants of these old families, in the female line, still live in Longhoughton ; but with the exception of one family, that of Elder, whose descendant is now a tenant farmer there, all the others in the male line have disappeared.

Longhoughton Church, like many others in this county, is of composite workmanship of different periods ; and though boasting of little architectural beauty, it possesses historic interest from some peculiar features.

Of the old church, which we know was in existence in 1147, there are distinctive remains deserving the attention of archæologists. The chancel arch, and the arch between the nave and the tower, and perhaps also some rude rubble work in the north wall, are referable to this early period. Both arches are circular ; that in the chancel wall, forming a narrow entrance only 7 feet in width, is perfectly plain without any ornament or moulding ; the thickness of

the wall is 2 feet 5 inches, and the arch is formed of dressed stones at the angles, but of common rubble masonry in the other parts; it rests upon no cushioned capital as in other Norman arches, but upon a simple angular impost moulding, chamfered below, and projecting from the supporting wall; and this moulding is continued along the abutment walls as a tablet or string course.

The arch between the nave and tower is more ornate, being formed of plain rounded mouldings such as occur in Norman work; but this also rests on an impost moulding of the same character as that in the chancel arch; and is supported by double recessed square piers projecting from the side walls. Some have supposed that the chancel arch might be Saxon; and we find that Rickman considers a similar impost moulding in Brigstock Church to be Saxon; but as it is associated in Longhoughton with other mouldings of a Norman character, we are warranted in referring these remains to an early Norman period; and probably they are the earliest Norman work in the northern part of Northumberland, belonging to a time very little later than the Conquest. The peculiar character of these remains will be more distinctly seen in the illustrative drawing by Mr. Storey. (*Plate III.*)

This church, like most others in the district, had originally only a nave with probably an apse; but in the early part of the fourteenth century it had been enlarged by the addition of an aisle on the south side. An original window in the decorated style of this period still remains in the east wall of the aisle; it has two lights, each with a pointed cusp heading. The octagonal piers and pointed arches between the nave and the aisle also appear to belong to this period.

The strong squat tower of Early English age, with walls five feet in thickness, erected in the earlier part of the thirteenth century, tells the same story of the insecurity of this period, as has been made known by the records already quoted. This church tower, like others in the border land, was erected for defence as well as for religious purposes; and there was need for such a place of refuge for the inhabitants against Scottish marauders, because there was no strong pele tower within the Vill of Longhoughton. In the *Taxatio Ecclesiastica* circa, 1291, Lesbury Church with the Chapels of Houghton, Alnwick, and Alnmouth, were valued at £70 annually; but in 1317, the ecclesiastical benefices in the deanery of Alnwick were returned waste and entirely destroyed. Even so late as 1567, Longhoughton Church

was kept up as a place of refuge; Clarkson in his survey says—"The chirch and steeple is the great strengt, that the poor tenants have to drawe to in tyme of warre; wherfor it is ever neadfoull the same be for that and other causes kep'd in good reperation."

Magna Houghton, or Longhoughton, with its church and numerous body of small proprietors, was a place of no little importance in the middle ages. A weekly market was held opposite to the church, and tradition points out the spot where the market cross stood, round which every corpse was carried before being buried in the church yard. After being lost for many years, it was discovered buried up in a smuggler's grave, and this weather beaten relic now crowns the east wall of the church.

These few notes I have strung together, as a prelude to some curious extracts from the register of Longhoughton Church, when it was kept by the Rev. George Doncan, who was Vicar from the year 1696 to 1719. He had been previously curate of Alnwick parish; where he was so highly esteemed by the Common Council of that borough, that they used their influence with the Duke of Somerset, to obtain for him the Vicarage of Longhoughton. This register throws light on the opinions and character of the Vicar himself; for as he records births, deaths, and marriages, he frequently draws the characters of the persons who are buried, married, or who have children christened. Of some of his parishioners he speaks favourably; but generally his pictures are dark and unlovely. Forgetful of the charitable maxim, "*de mortuis nil nisi bonum*;" he spares neither the dead nor the living. Evidently he was dogmatic, of strong opinions, and cynical, warmly attached to his own church, but with little kindly regard to those who differed from him. As one hundred and thirty-four years have passed away since the last entry was made by this eccentric man, and as moreover, almost all the families that are chronicled by him are now extinct in the parish, we may, without offending any one's feelings, cull a few of the peculiar records in this register.

Thus does it commence—"Longhoughton. This register begins from the year in which I entered the ministry of this parish, which was Anno Domini 1696." The characters given by him are enclosed in brackets, sometimes expressed in Latin, and sometimes in English; and as we shall see the phraseology is exceedingly strong.

In the earlier records, only a few individuals are charac-

terized, and the verdict is generally favourable or moderate in its tone.

Burials, 1696. Timothy Arkle, whitesmith and spurrier (*valde senior*) of the coal houses. Edward, the son of William Taite, ancient farmer of Longhoughton. 1699. Margaret, the widow of Thomas Adams, one of the ancient and principal farmers of Longhoughton. Peter Scot, a very honest but poor day labourer of Longhoughton. George Neel, a very honest hinde of Longhoughton. 1700. Madam Mary, the wife (a most virtuous lady) of Edward Roddam, Esq., of Littlehoughton (*valde impius*). Henry Grey, a very honest poor taylor of Littlehoughton. Thomas Binion, an old haberdasher and freeholder of Alnmouth (*profanus*). 1701. Frances, the widow of William Rainoldson, one of the ancient farmers of Longhoughton. Robert Shepperd, (*valde senex et cælebs*) one of the ancients of Longhoughton.

Some, in the subsequent records, are simply said to be "*impius*," but more frequently we find "*valde impius*." In 1702 buried Elizabeth, the wife of Luke Pringle, (*ambo valde impij*) joyner of Longhoughton. Pringle was no favourite; he is in other entries said to be "*tristé impius*," "*homo pessimus*," "*nequissimus homo*," and "obstinately wicked." 1721. Roger Pearson, (*impius et obstinatus*) a hinde of Littlehoughton. 1705. John Foord, (*impius et impiger*) a hinde of Seaton House.

Several are described as worthless, but in different degrees. 1708. William Sanderson, a (*valde nequam*) hind. 1710. James Flint, (*omni modo nequam*) a webster of Longhoughton; and he is afterwards "*a nequissimus webster*." 1711. John Young, a (*nequissimus*) long time herd of Longhoughton. We find the following extraordinary superlatives:—1713. John Robyson, (very *nequissimus*) a day labourer; 1719. Robert Pringle, a (*malus malorum*) day labourer. 1712. Buried Robert Pringle, a (*malus filius mali patris*) day labourer. In 1727 this Robert Pringle is a (*impié ignorans peccat* :) day labourer. In this year there are some new terms introduced:—William Grey, (*valde ignorans et obstinatus peccat* :) a hinde; Henry Elder, (*infelix valde nuptiis*) an ingenious smith of an ancient race of Longhoughton; William Chisholm, a (*salutis neglectus*) hinde; William Wilson, (*tristé impius*) a day labourer; Mr Nichol Grey, (*vile malus*) a butcher and innkeeper; Ralph Dixon, a (*incurius animæ*) hinde; Anne Wilson, (*vilis ebriosa peccat* :) a poor mendicant widow of Longhoughton. In 1728 christened Mary,

the daughter of Martin Ryllie (*improbus, Hibernicus miles*) of Longhoughton. In 1729 buried Isabel, wife of William Urin, (*militis maxime impij*); and Jane, (*maxima impia*) the wife of (*tam impij*) Thomas Weake, of Seaton House.

The Vicar, though generally using the Latin language, sometimes employs the vulgar tongue with startling effect. Brutish, wicked, and ignorant, are not unfrequently applied. We have in 1725, Thomas Cleghorn, a brutish barnman, and John Marshall, a brutish taylor. Married 1706 Thomas Story, (a very brutish and wicked fellow) herd of Sharplee, and Mary Temple, of Ellingham; 1724. Thomas Vardy, an (obstinate, ignorant, and wicked) tanner of Alnwick, to Isabel Trumble, of Longhoughton; 1706. William Morton is (a gross, ignorant, and wicked herd) of Scrablees; 1722. John Robyson, senior, is a (very wicked and obstinate hardened) herd of Bowmar; 1723. Helen Peet is the (ignorant and very ill) widow of William Peet, an old collier and cottager of Longhoughton; and John Ferrett is a (obstinate, ignorant, and wicked) cadger and day labourer of Bowmar.

The fishers of Boulmer and Seaton must have been a demoralized race, or our registrar must have been strongly prejudiced against them. 1706. Buried Barbara, the wife of Thomas Pennyman, (a very ignorant) fisher of Seaton House; and in 1710 he is "a very old obstinate ignorant and wicked fisher;" George Pollet in 1724 is (a brutish and profane) fisher of Bowmar, in 1725 he is a careless and ignorant fisher, in 1727, when he is married again, he is a (*triste ignorans et prophanus peccat:*) fisher. 1727. Robert Dawson is a (*obstinatè ignorans peccat:*) fisher; Nicholas Richyson is (*salutis desidiosus*) a fisher; George Strachan (*vah salutis incurios*) fisher; John Dowell, a (*vile impius peccat:*) fisher. Several others of Boulmer are said to be "careless and ignorant."

These sketches give but a dark picture of the moral condition of Longhoughton; yet there are a few better characters to save the parish. Some are described as honest or good. 1724. Henry Bell is an honest herd; 1706. Thomas Forman is (a very good man) an underfarmer of Longlee; 1716. Ralph Rublige is pious and good, of Little Miln; 1720. Joseph Killgryce is a (very serious good man) webster of Longhoughton; 1723. buried Barbara, the serious good wife of James Gustard, an old and good herd; 1721. Richard Gustard, (a knowing good man) herd of Longlee; 1722. Simon Dixon, a good honest farmer; George Robyson, a serious good collier; 1724. buried Patrick Dodds, a religious

smith ; George Gibbeson, a very religious day labourer ; Nicholas Davison, a serious and religious herd ; and Robert Bairnsfather, a serious, sensible, and good day labourer.

1703. John Ditchburn is (*valde pius*) a miln wright of Longhoughton. 1704. John Robyson is (*valde probus*) blacksmith and ferrier. 1707. Robert Bowden is a (*probus et pius*) cowper. 1711. Cuthbert Renwick, a (*probus et honestus*) taylor ; and Henry Robyson is "*probus et sincerus*." 1726. Buried Katherine, the wife of Nichol Truchet, (*filia piæ matris et uxor probi maritis*) a collier. Margaret, the wife of John Bowin, (*uxor proba maritis probi*) a hinde of Longhoughton. 1711. Buried Mary, the wife of a very honest herd and an old and long oatmeal maker ; this oatmeal maker marries again in 1714, and thus runs the record :—"Married William Elliot, a very honest herd and oatmeal maker, now in Harly houses, and Jane Hood of Denick." In the following case the character is a mixture of good and evil :—1705. Christened Robert, son of William Thomson, (*honestus homini sed prophanus Deo*) milner of Little Milne. In two cases the registrar lays aside his dogmatism and inclines to charity :—1707. Joseph Killgrype, (*spero sincere pius*) webster of Longhoughton ; in 1722 he is said to be "*probus et honestus ut spero* ;" but in 1720 this hope rises to faith, and he is called "a very serious good man."

The following miscellaneous extracts possess some interest. The registrar praises his wife, of whose pedigree he seems proud :—1701. Married George Doncan, Vicar of Longhoughton, and Margaret, the youngest daughter of Littleden Ker, a very ancient barron of Teviotdale, near Kelso ; 1723. Buried, Margret, the (best of wives, the sister of Littleden Ker, an ancient baron in Scotland, near Kelso,) wife of George Doncan, Vicar of Longhoughton. 1711. Buried George Grey, an old innoſent and fortunate fiſher of Bowmar, (a batchelor) ; Jinie, wife of William Grey, (a quack and warlock doctor,) of Littlehoughton. In 1713, Married Cuthbert Sapit, a lame cobbler and ſchoolmaſter of Bowmar. 1727. Buried, Isabel, the widow of John Morris, a (very old herd, here and there.) On one occaſion the registrar ſeems to loſe courage,—1719. Buried, Mr. Thomas Adam, bailiff of Longhoughton ; a ſpace is left for his character, which is not filled up ; perhaps the Vicar, not inclined to ſay good, had not the hardihood to chronicle evil of ſo diſtinguiſhed a perſonage as the bailiff.

The moſt ſingular of theſe records, however, are thoſe in which the Vicar evidences his ſtrong attachment to his own

church. 1699. Buried Kathrine, wife of Claudius Blackly, (a mighty good churchman,) hinde of Littlehoughton; and when he marries again in the following year he is "a very good churchman." William Thew, and John Paterson, a hinde of Longhoughton, are honoured with the same praise. 1712. Buried John Egden, (a very dissenter in his life, and yet very good charitable man; he was some years before his death brought to be a sincere member of the church); and when his wife dies, in 1717, the record is "Thomassen the good widow of John Egden, the said good dissenter who came into the church." 1718. Christened Eleanor, daughter of Mr. William Mien, (now come from the dissenters,) inn-keeper of Longhoughton. Other dissenters, however, are not so gently dealt with. 1714. Married Alexander Smith, (a wicked k[nav]e and a dissenter,) webster, of Longhoughton, and Susan Davison. Richard Gladstanes, herd of Littlehoughton, fares still worse; when in 1719 his son John is christened, he is called "a Janus herd;" when his daughter Mary is christened in 1720, he is "a Janus in religion;" and in 1727 when his son John is buried, he is designated "(a Janus tergiverse whig,*) herd of Littlehoughton." For such characters, Littlehoughton must have enjoyed a bad notoriety, for in 1725 was buried George Heymers "a tergivers Janus whig, herd of Littlehoughton."

This register presents a very unfavourable view of the moral and religious condition of Longhoughton parish; and as the bad characters rather increase than decrease towards the end of Mr. Doncan's ministry, the record tends to shew that his influence over the people had been slight during the thirty-four years he was the religious instructor and guide of the parish. It may, however, be reasonably inferred from the dogmatic tone of the record, that the Vicar was cynical and prejudiced. Seldom indeed are such dogmatic judgments just—they are almost always based on narrow views; and doubtless they would be greatly modified by taking into consideration all sides of a character.

We must try however, to part from our eccentric Vicar with some pleasant impression. His last record is kindly, and we may hope that he too died in charity with all men. 1729. Buried Mary, the daughter of Henry Taylor, (*valde pius et probis*,) a webster of Longhoughton.

* Whig, now the name of a political party, was originally a nickname of the Covenanters of the south-west of Scotland, from *whiggum*, a word used by them in driving horses; the Dissenters in Northumberland, being mostly Presbyterians were called by this name, and it is still occasionally applied to them in a jeering tone.

Description of Entomostraca from the Mountain Limestone of Berwickshire and Northumberland. By PROFESSOR T. RUPERT JONES, F.G.S., &c. *With notes on the Strata in which they occur.* By GEORGE TATE, F.G.S., &c.

IN the course of an exploration of the Berwickshire coast in 1854, I found some peculiar fossils, resembling somewhat compressed *Sanguinolites*, and occurring as rusty film on a black carbonaceous shale. Being, however, persuaded that they were not mollusks, and that moreover they were new, I submitted them sometime afterwards to Professor Jones and Dr Baird; and we arrived at the conclusion that they were *Entomostraca* of the genus *Estheria*. As Professor Jones was directing special attention to this group of organisms, I placed my specimens of mountain limestone *Entomostraca* in his hands for examination and description.

In a monograph on Fossil *Estheriæ* published by the Palæographical Society, he has given a description of this fossil; and with his permission it is here reprinted, as a contribution to the Natural History of the Borders; along with the description of two other new forms of *Entomostraca*. Professor Jones finds that Goldfuss and De Koninck have figured and described a similar fossil; the former under the name of *Sanguinolaria striata*, and the latter of *Cardiomorpha striata*. The following are Professor Jones' description of the genus, the species, and the Berwickshire variety:—

GENUS ESTHERIA.

“ESTHERIA is a *Crustacean Entomostracous Phyllopodous* animal, with numerous branchial feet; four pairs of antennæ (the two upper pairs used for locomotion); caudal segment ending in four hooked lamellæ; eyes two, closely approximate; carapace bivalve, enclosing the animal excepting part of its head, thin, horny, concentrically ridged and reticulated, pitted, or striated between the ridges.

“*Estheria* is found in fresh and brackish waters.

“In the fossil state the characters of the carapace alone are recognisable.

“ESTHERIA STRIATA, *Münster*, sp.

SANGUINOLARIA STRIATA, *Munster and Goldfuss*. 1826, *Petref. Germaniæ*, II., p. 280, pl. 159, fig. 19.

CARDIOMORPHA STRIATA, *De Koninck*. 1842, *Anim. Fossil. Ter. Carbonif. Belgique*, p. 105, pl. H. fig. 9, a, b, c.

"Carapace-valves thin, nearly oblong, but somewhat higher at the posterior third than anteriorly; umbo distinct, placed forward, being situated at the antero-dorsal angle, beyond which the convexity of the anterior border projects but slightly; posterior border boldly rounded, usually more or less elliptical and oblique; ventral border gently and obliquely convex. The surface of the valves presents numerous concentric wrinkles (30—50 or more), some of which appear to be the raised ridges usual in *Estheriæ*, and the others are due to finer intermediate striæ. The surface is frequently found to be wrinkled transversely with very delicate corrugations crossing the concentric ornament, and due to mechanical causes. Coarser wrinkles, also due to the crumpled state of the fossil valves, are often seen in some of the Lammerton specimens; the latter seem to affect the inner portion of the shell, which sometimes shows a cellular appearance analogous to the reticulate structure of crustacean shell. This reticular tissue is found freely dispersed on the shale from Lammerton, over some portions where but little other trace of the *Estherian* valve itself remains. Where the boundaries of the meshes make strong lines parallel with the concentric lines of growth of the shell, the fine intermediate striæ of the surface would probably be stronger than where the reticulation is irregular.

"Of *E. striata* I have seen numerous specimens from several different localities; namely,—1. From Lammerton, Berwickshire; in bituminous shales belonging to the mountain limestone series. 2. From the Lanarkshire coal field (in cannel coal). 3. From Silesia, in carbonaceous shales of the lower coal measures. 4. From two places in Lancashire, in cannel coal of the middle coal measures, and in bituminous shale of the lower coal measures. 5. From near Chesterfield, Derbyshire, in carbonaceous shale of the lower coal measures.

"Differences of outline are to be observed among the various individuals; and some of these variations appear to be limited to one or other of the groups of specimens from the five localities mentioned. It is convenient, therefore, to seize these distinctions, slight as they are, and certainly not of specific value (nothing of the body and limbs of animals remaining to help our judgment), and make them serviceable in the recognition of the several very similar forms of carapace from widely separate places, and from at least four distinct horizons in the carboniferous group of strata.

ESTHERIA STRIATA, Var. *TATEANA*, Jones.

Monogr. Foss. *Estheriæ*, Pal. Soc. 1862, p. 26, pl. I., figs. 15—18.

Height of valve, 1-6th of an inch, length 3-12ths of an inch. Proportion 2 to 3.

Height 3-24ths of an inch; length 5-24ths of an inch. Proportion 5 to 7.

Height, nearly 1-10th of an inch; length, more than 1-10th of an inch. Proportion 11 to 14.

“Carapace-valves nearly oblong, but higher at the posterior third than anteriorly, boldly rounded behind with a semicircular outline, obliquely rounded in front. Some have a shorter carapace, and appear to have been even shorter, and of a more rounded form, than others. We have a corresponding occurrence of oblong or subovate, in company with subquadrate forms of *Estherian* carapace in the case of the Rhætic *E. Mangaliensis* of India, and the Wealden *E. elliptica*.

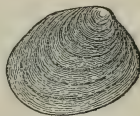
“The specimens of *Estheria striata*, var. *Tateana*, were kindly submitted to me by their discoverer, Mr George Tate, F.G.S., of Alnwick, some years since. They are numerous, but obscure, occurring either as impressions or as thin rusty films, or as a faint reticulate tissue, in a black and somewhat bituminous shale. They seem to have been originally densely crowded; and are associated with Fish-remains, *Spirorbis carbonarius*, and impressions of Plant-stems. The shale belongs to the Mountain-limestone series, and comes from Lammerton, in Berwickshire.

“To render the geological position of these *Estheriæ* quite plain, Mr Tate has obliged me with a succinct account of the strata and fossils observed by him in the section where these shales are met with. He says—

““The dark carbonaceous shale containing *Estheriæ* is exposed in the cliff along the Berwickshire coast for upwards of a mile; it is accessible, however, only at a few points; and *Estheria* has apparently but a limited distribution in the bed. I have found it only near Lammerton. The section here, is as follows (in descending order):—

FIG. 1.*

Sketch of a subquadrate individual of *ESTHERIA STRIATA*, from Lammerton, Berwickshire.



(Magnified 6 diameters.)

* For the use of this wood-cut, the club is indebted to the Palæontographical Society. In Professor Jones's monograph on Fossil *Estheriæ*, will be found full illustrations and descriptions of all the varieties of *Estheria striata*.

	Feet.	Inches.
1. Reddish sandstone - - - - -	90	0
2. Dark carbonaceous shale, with <i>Estheria</i> ; where thickest, it is generally hard and flaggy - - - - -	12	0
3. Limestone, fossiliferous; usually of a dun colour, and weathering buff - - - - -	4	0
4. Coal, not exceeding - - - - -	0	7
5. Fire-clay, with Stigmarian rootlets - - - - -	5	0
6. Reddish sandstone; many of the beds thin and slaty - - - - -	30	0
7. Shales, with a little poor ironstone - - - - -	4	0
8. Coal (irregular) - - - - -	0	10
9. Yellow sandstone - - - - -	4	0
10. Drab, slaty sandstone, passing into argillaceo-arenaceous shale - - - - -	10	0
11. Arenaceous shale, slightly calcareous - - - - -	3	0

“ ‘These beds dip east by south; all of them belong to the Mountain-limestone group, though they are not far from its base.

“ ‘No. 1. This sandstone is overlaid by many beds of limestone, and associated with sandstones, shales, and coals, which form the mass of the Mountain-limestone group, extending into Northumberland.

“ ‘No. 2. The Estherian shale. This contains another Entomostracan form.* There are also a number of broken fragments of plants; the most numerous being reed-like stems, longitudinally ribbed, but without joints, *Coniferites verticillatus* (Tate†), and *Sphenopteris Johnstoniana* (Tate‡). Attached to the plant-stems is *Spirorbis carbonarius*. Scales of Ganoid Fishes are abundant; and I have determined teeth and scales of *Holoptychius Hibberti* in this shale. In the lower part of the deposit I found *Chonetes Hardrensis* and *Nucula gibbosa*. This bed, taken in connection with that below it, shows changes of conditions from marine to estuarine, and probably to fresh water.

“ ‘No. 3. This limestone is very fossiliferous, containing:—

Strophomena analoga.
Productus giganteus.
Productus semireticulatus.
Lithodendron junceum.
Lithodendron affine.
Lithostrotion Portlocki.

Stenopora tumida.
Favosites parasitica.
Astræopora cyclostoma.
Syringopora geniculata.
Aulopora gigas.§

“ ‘No. 10. In the arenaceous shales I have found *Lingula squamiformis*, and an elongated form allied to, but which may be different from, *Lingula mytiloides*.

* See page 87.

† “Fossil Flora of the Eastern Border,” p. 309.

‡ Ibid., p. 306.

§ “Transact. of the Berwickshire Nat. Club,” vol. iv. p. 152—154.

“No. 11. Here occurs *Discina nitida*. In several of the beds of Nos. 10 and 11 are many Annelid-borings.

“In arenaceous shales a few yards below the above section, I have found *Sanguinolites arcuata*, *S. carbonaria*, *Aviculo-pecten Pera*, and *Spirifer laminosus*.” [G. TATE, February 9th, 1861.]

“*Habitat of E. striata*.—With regard to the possibly freshwater or marine character of *Estheria striata*, above treated of, as indicated by its associates, I can only say that, excepting the proximity of those dubiously marine forms, *Anthracosia* and *Anthracomys*, and the presence of *Spirorbis* at Lammerton, sea-shells are wanting in the shales and cannel-coal in which this *Estheria* has been found.

GENUS CANDONA.

“CANDONA is a bivalved Entomostracous Crustacean, belonging to the *Ostracoda*, and is nearly allied to *Cypris*, having two pairs of antennæ, and two pairs of feet; but *Candona* has the lower or pediform antennæ furnished with a hook instead of with a pencil of long hairs, and creeps instead of swimming. The carapace-valves of *Candona* are often larger and more oblong than those of *Cypris*.

“CANDONA(?) TATEANA, Jones. Fig. 2.

Monogr. Foss. Estheriæ, Pal. Soc. 1862, p. 123, pl. V. fig. 15.

FIG. 2.

CANDONA(?) TATEANA

From the Mountain-limestone shale, Lammerton, Berwickshire.

“A small, smooth, oval carapace-valve, somewhat crushed, occurs with *Estheria striata*, var. *Tateana*, at Lammerton in Berwickshire. This, for the sake of distinction from other somewhat similar specimens found elsewhere, although it is but poorly defined, was denominated by me *Candona*(?) *Tateana*, after the discoverer.



(Probably the left valve, with the anterior end upwards.)
Magnified 30 diameters.

GENUS BEYRICHTIA

“BEYRICHTIA is an extinct bivalve Entomostracous, belonging to the *Leperditidæ*, which probably combined characters now found separately in the *Phyllopoda* and *Lophyropoda*.

“BEYRICHTIA TATEI, sp. nov.

"Carapace-valves somewhat *Leperditia*-shaped, about 1-20th of an inch long, nearly oblong, boldly rounded behind, less so in front; ventral margin flatly convex; hinge-line straight; postero-dorsal angle more distinct than the anterior angle. Valves smooth,

FIG. 3.

BEYRICHIA TATEI, Jones.

From the Carboniferous shales of Brunton near Chollerford.



(A) Left valve, with the dorsal edge upwards.

(B) Profile of the valves united, back view.

(Magnified 20 diameters.)

moderately convex, depressed towards the margin; impressed with a very shallow transverse sulcus, reaching from the middle of the back to the centre of the valve. In one specimen the pyritous cast seems to show that radiating, sinuous, tapering furrows existed on the inside of the shell, as in *Leperditia*.

"This *Beyrichia* reminds us of the little Silurian *Beyrichia* of Canada, figured and described in the *Annals of Nat. Hist.*, 3rd Ser. vol. i. pl. 9., in which a simple furrow and a tendency to a *Leperditia*-like form are characteristic. This *Beyrichia* is about the size of some of some of the smaller of the Canadian specimens referred to, but has its own style of outline, profile, and sulcus. By the name now given to it, this species will be associated with the enthusiastic and pains-taking geologist, Mr G. Tate, F.G.S., of Alnwick, who has so well and so long worked out the history of the Carboniferous rocks of the Border Counties." [T. RUPERT JONES, 1863.]

This *Beyrichia* is from a black shale, which is below the "big limestone" at Brunton, near Chollerford, on the North Tyne, and about the middle of the Mountain-limestone series of Northumberland. Containing both carbon and iron it is similar to the black ironstone band of the Glasgow district, which is valuable not only for the excellence of the iron it produces, but also because of the carbon in the band helping to smelt the ore. The shale at Brunton is peculiar from the assemblage of the fossil organisms it contains, resembling in this respect the Lammerton bed. Besides crowds of *Entomostraca*, there are great numbers of *detached* scales and other reliquiae of Ganoid fish, such being indeed the usual state in which fish-remains are found where *Entomostraca* are abundant; for these little creatures seem to have attacked the fish as soon as they died, and, devouring the flesh

and ligaments, the hard parts of the skeletons separated from each other and were scattered. *Anthracosia* also occurs—a genus of mollusks generally considered analogous to the freshwater *Uniones*; but along with them is *Lingula squamiformis*, which occurs in abundance along with marine organisms in other beds of the Mountain-limestone in Northumberland. It is remarkable that a *Lingula* is the only determinable marine shell as yet found in the Newcastle coal-measures; at Ryhope, near Sunderland, Mr Kirkby has found *Lingula Credneri*(?). The peculiar association of fossils in this shale at Brunton proves that it had been deposited in an estuary, or in an inland sea of brackish water, such perhaps as the Caspian, where we may expect to find a peculiar intermingling of different forms of organic life. [GEO. TATE, 1863.]

Entomological Notes. By JAMES HARDY.

CLEOPUS PULCHELLUS. This spring I found this pretty weevil on *Scrophularia nodosa* in Penmanshiel Wood. It has not hitherto been recorded as a Scottish insect.

CIONUS BLATTARÆ. On the same plant in the Pease Dean, and in the dean at Oldcambus.

SALPINGUS VIRIDIPENNIS. Mr Boyd sent me an example to examine from Tweedside. Previously I had only seen one near Newcastle.

PLUTELLA CRUCIFERARUM. This minute moth and its green caterpillar were very prevalent in the turnip fields throughout the season. It appeared to have come from the wild mustard and Runch, which were more than usually abundant in cultivated fields; and the caterpillar fell upon the Swedish turnip as soon as the leaves were formed, and by nibbling large holes in the leaves, very much hurt its growth. To this also the dryness of the season contributed. Latterly it attacked all kinds of turnips, but the continued growth of the roots in autumn, enabled them to overcome it. Some of the moths were still alive far on in November. It has probably not been so abundant since 1851, when it was enormously multiplied over Great Britain and Ireland.

Ancient Bridge in Coldstream. By REV. PETER MEARNES.

IN cutting a new saw-pit in a garden the property of Mr James Briggs, near to Duke Street, the arch of an old bridge was discovered, which there is good reason to believe had been erected in connection with the old abbey near to which it stands. Workmen were employed to dig to the bottom of the walls supporting the arch; and the entire arch, and all connected with it were thus brought to light. This bridge is on a direct line from the abbey to the ford across the Leet. There are no traditions of a bridge existing at this spot in former times; but old people remember that the ground here was once hollow, and that it was gradually levelled by earth brought from other parts. The top of the arch is $4\frac{1}{2}$ feet below the present surface. The ground was formerly marshy, a proof of which we have in Duke Street sometimes now receiving its former name of *Duke Dub*—a place for ducks—a name by which it was called in title deeds a century ago. The street is now thoroughly drained and all traces of a marsh have disappeared. Within the last twenty years water ran in the direction of this street; but the stream is now diverted above the town on the north side, and joins the Leet at a point further up the river.

When this arch was used as a bridge, it would answer well for foot passengers or beasts of burden; but after allowing for parapets, it is too narrow for a vehicle, being altogether only 5 feet 9 inches in width. The road which crosses it, as traced on each side, consists of a thin crust of cinders and gravel with some broken stones and fragments of pottery. The arch is $2\frac{1}{2}$ feet high; the side walls are 5 feet apart and 5 feet in height; and the arch has a span of 6 feet, as it extends 6 inches over each wall.

In digging for the foundations of the walls, several bones were found larger than those of man.

Coldstream Abbey was founded about the year 1150, by Gospatrick, the fourth Earl of Dunbar, and his pious Countess Derder. The original charter is as follows:—

CHARTER OF THE FOUNDATION OF THE PRIORY OF COLDSTREAM
BY EARL GOSPATRICK.

“Earl Gospatrick to all honourable men, barons and servants, clergy and laity, either present or future, health. Be it known that we granted and conceded to God and the Sisters of Witchon,

serving God in that place, one half of the church of Laynalle,* with the half plough-land of land and one plough-land of land, viz., one half the land of Laynalle, and the other half of the land of Birghame, in perpetual gift; and know that my spouse, Derder, made a donation to those Sisters of one plough-land of land of the property of Hirzell,† and the church of the same, which I ratify and confirm. Know ye also that I have granted to them one half plough-land of land of the property of Laynall, with the addition of my plough-land. And know that Norman, the son of Edulph, has granted and conceded to these Nuns, one plough-land and a half of the property of Laynall, with my consent, and that of Norman his heir. And thus I confirm and command, that those before mentioned donations to the said Nuns, may be freely, quietly, and honourably held in perpetuity, in the same manner as any gift is enjoyed freely and justly.

“Witnesses :—WALDERO, my son.

KETEL DE LETHAM.

G. FRISELL.

HALDANE, the cupbearer.

R. BLOD.

R., the son of Hanibald.‡

Gospatrik died in 1166, and was succeeded by his son Waldeve, who confirmed and enlarged his father's gift. In his charter he said—“Be it known to all equally present and future, that after the half part of the church of Laynall granted by my father Gospatrik to the holy sisters of Coldstream, I have conceded, and by this present charter have confirmed, and I have sincerely granted, the other half of the same church of Laynall to the same holy Sisters of Coldstream after decease of the incumbent.”

Of this once famous Abbey hardly a fragment now remains.

* Lennel.

† The Hirsell, the seat of the Earl of Home.

‡ See Historic Memorials of Coldstream Abbey, Berwickshire, collected by a Delver in Antiquity. Containing a Translation of the Chartulary, as preserved in the Macfarlan and Harleian MSS., to which are appended sundry local, genealogical, and historical Memoranda. Printed for private circulation. London: 1850.

Rain Fall at Glanton Pike, Northumberland, in the year 1863. Communicated by FREDERICK W. COLLINGWOOD, Esq.

				Inches.
January	..	..	..	4.45
February	..	..	..	0.48
March	..	..	..	1.60
April	..	..	..	1.27
May	..	..	..	2.05
June	..	..	..	4.08
July	..	..	..	0.43
August	..	..	..	2.79
September	..	..	..	4.33
October	..	..	..	3.51
November	..	..	..	3.02
December	..	..	..	2.08
				<hr/>
				30.09

The level of Glanton Pike above sea is 534.193 feet.

Places appointed for the Meetings of the Berwickshire Naturalists' Club for the Year 1864.

Greenlaw	on	Thursday	the	26th	May.
Cheviot	„	„	„	30th	June.
Ancram	„	„	„	28th	July.
Bamburgh	„	„	„	25th	August.
Berwick	„	„	„	29th	September.

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered at Berwick, on the 29th of September,
1864. By WM. STEVENSON, Dunse, President.

GENTLEMEN,

In accordance with the usual custom I have now the pleasure of submitting to this meeting an account of the proceedings of the club during the past year. I regret that ill health and other causes prevented me from being present at the Belford, Greenlaw, and Cheviot meetings; but I am happy to say that my friend Mr Tate, our indefatigable secretary, has furnished me with copious and interesting notes relative to those meetings. The notes of the Ancrum meeting I have supplemented largely from the account of the day's proceedings, given in the *Kelso Chronicle*, by Mr Tait, one of our members, and editor of that journal. These notes I shall now lay before you, reserving to a subsequent part of this address any remarks which may occur to me bearing upon the subjects brought under notice.

Our last anniversary meeting was held at Belford on 24th September. Few members appeared at breakfast as the

morning was gloomy, with occasional showers of rain and peals of thunder. Fortunately, in the course of the day the weather cleared up, and many additional members joined the party before the dinner hour.

There were present :—The President, Messrs. J. C. Langlands, F. Fearnley, T. Y. Greet, Benj. Nicholson, J. Church, senr., Wm. Boyd, Robert Graham, J. Church, junr., P. J. Selby, Thomas Clutterbuck, Geo. Hughes, Thos. Tate, Robert Douglas, Wm. Church, and George Tate ; Revds. E. Mangin, F. R. Simpson, J. A. Wilkinson, M. Burrell, J. D. Clark, P. Mearns, A. Davidson, Wm. Lamb, Edward Merrott, W. J. Cooley, J. W. Dunn, Wm. Dodd, John Bigge, Dr Marshall, Messrs. C. P. Bosanquet and M. Pepys.

After breakfast the accounts were audited, and it was reported that there were 207 members in the club. The number of members being now so considerable, and the accounts being kept and business arranged by honorary officers, it was deemed desirable, that their labour should not be unnecessarily increased by irregular payment of the annual subscription. The secretaries were therefore directed to issue a circular, requesting members promptly to remit their subscriptions after the first application from the secretaries.

In accordance with the resolution of the meeting held in June last, a proposition for reprinting the earlier volumes of the proceedings of the club was considered. It was decided, however, that as the club has no funds available for this object, it would be necessary that a sufficient sum should be raised by subscription before attempting to print these volumes ; but, as several members present expressed their willingness to subscribe, it was resolved, that a circular be sent to all the members, to ascertain what number of subscribers could be obtained for a complete set of the first three volumes, at the price of £1 for a copy.

Mr Robert Brown, of Littlehoughton, was elected a member ; and the Rev. James Huie, of Wooler, and the Rev. John Bigge, of Stamfordham, were proposed and seconded for membership.

The thanks of the club were passed to His Grace the Duke of Northumberland for the presentation of a reprint of 194 copies of the proceedings of the club for the year 1837.

The places of meeting for next year were appointed to be at—

Greenlaw,	on Thursday the 26th May.
Cheviot,	.. .. 30th June.
Ancrum,	.. .. 28th July.
Bamburgh,	.. .. 25th August.
Berwick,	.. .. 29th September.

Business arrangements being completed, the members proceeded along the basaltic crags to the northward of Belford. Late in starting their walk, and over a district often explored before, they could not expect to observe much that was new. Some time was spent in examining old foundations on the top of the crag, probably of some religious house, but of this there appears to be neither record nor tradition. From this point a fine view presents itself; to the eastward are seen many of the most interesting objects on the coast—Lindisfarne, Bamburgh Castle, the Farne Islands, and in the distance Dunstanburgh; westward are the great sandstone ridges forming the high moorlands of Northumberland, and beyond these rise the tops of the Cheviot hills. Here too we had an opportunity of tracing with the eye the northern part of the winding range of the great basaltic whin-sill which passes through the county; commencing in the north at Kylloe, where it stands up like a huge wall, it sweeps round by Detchant to Belford, and thence wends eastward to Spindleston and Bamburgh, and away into the Farne Islands.

At Middleton the party examined, with much interest, a characteristic example of a rock *in situ*, polished, grooved, and striated. The basalt here is covered with a limestone which is overlaid by a deposit of boulder clay. The limestone is at present quarried, and from a considerable area of its surface, the overlying deposit has been cleared. This surface, immediately below the clay, is not merely smoothed, but polished brightly like marble. It is besides grooved

and striated, the lines running from N.W. by W. to S.E. by E., being nearly in the direction of the dip of the stratum, which is N.W. by N. Several other examples of the same kind occur in North Northumberland, as at Hawkhill, Dunstanburgh, and Swinhoe. Large blocks embedded in the clay are polished and scratched in a similar manner. These effects have usually been attributed to ice action—probably to great icebergs detached from glaciers, laden with blocks and gravel, floating in an ancient sub-arctic sea, and which when driven by currents over the rocks at the bottom of the sea, polished these rocks by their movement and weight, and furrowed and striated them by the gravel and sand acting as graters.

After dinner an able and interesting address was read by the president. On his nomination, Mr William Stevenson, of Dunse, was elected president for the ensuing year. The subscription was fixed at 6s., and it was resolved to print 600 copies of the Proceedings of the year.

A specimen of the larva of the *Acherontia Atropos*, sent by Mr Dand, from Hauxley, was shewn; and a specimen of *Echinus neglectus*, (new to the district,) sent by Mr Robert Embleton.

There were also read a paper from Major Luard, describing the opening of a cairn on Lucker moor, and a paper by the Rev. P. Mearns, on an ancient bridge at Coldstream.

The first field meeting of the year 1864 was held on the 26th May, at Greenlaw. There were present:—Captain M'Laren, Messrs. Robert Douglas, Thos. Clutterbuck, Wm. Cunningham, Thos. Friar, jun., Edmund Friar, Jas. Tait, John Wilson, Charles Rea, T. Y. Greet, Wm. Chartres, Wm. Dickson, sen., Patrick Dickson, John Paxton, Thos. Robertson, George Tate, Charles Watson, Revds. J. Walker and Peter Mearns; and as visitors, Lieut. M'Laren of the 58th Regiment, Mr Adam Matheson, and the Rev. M. Weeks.

After breakfast a paper was read by the Rev. John Walker, on Greenlaw. The Rev. John Bigge, Stamfordham, and the Rev. James Huie, Wooler, were elected members; and

Messrs. Wm. Brown, Melrose, Edward Allen, Alnwick, and Adam Matheson, Jedburgh, were proposed for membership.

The walk of the day was across the high moorlands to the Bedshiel Kaim, the party returning to Greenlaw along the course of the Blackadder. Some members extended their observations to the sections exposed in the railway cuttings below Greenlaw, and to the ridge of basalt at Hume Castle.

The day was very favourable for the examination of the kaim, and in this, the party was much assisted by Mr Wm. Cunningham. In several sections, the materials of which this remarkable ridge is composed were noticed. Deposits of gravel and sand were seen to be distinctly but irregularly stratified. Three-fourths of the gravel were rolled pebbles of greywacke from the Cambro-silurian formation of the Lammermoor hills, mingled with others of old red sandstone, porphyry, amygdaloids, and a very few of basalt. The form of the kaim has been described in former numbers, and a paper by the president discusses the theory of their formation. Here it may be further noticed, that in the kaim itself no polished and scratched blocks have as yet been discovered, but if search be made in the lower part of the ridge they may probably be found, for similar sand and gravel deposits are cut through by the railway near Greenlaw, and there one polished and scratched block was discovered. A similar discovery was made last year in the ridge at Hoppen in Northumberland, which is a kaim of smaller dimensions than those in Berwickshire. Ice action therefore has very probably been brought into play when the kaims were deposited.

On both sides of the kaim there is a moss or peat deposit, which is in some parts 12 feet in depth. Formerly peat was dug out, dried and carried on asses' backs into Greenlaw, and sold for domestic use; but the introduction of coal caused the peatary to be abandoned. As the conditions of moisture and cold still continue in this elevated region, the growth of mosses and the accumulation of peat have gone on in this deserted peatary, and have furnished data, from which it has

been inferred, that peat accumulates there at the rate of about one foot in a century.

On the return from the kaim a remarkable old camp was examined at Black Castle Rings, on the east side of the Blackadder. It has an area of about three-fourths of an acre, and occupies a corner having natural cliffs, 100 feet in height on the west and south sides, and is defended on the exposed sides by two semicircular rampiers and ditches, which are in good preservation. It resembles strongholds belonging to the ancient British period.

Greenlaw stands on the upper beds of the old red sandstone, of which sections more than 100 feet in thickness are exposed in the banks of the Blackadder. About a mile eastward of Greenlaw, the railway cutting exposes a broad mass of trap, consisting of amygdaloids, basalt, and trap tufa; and abutting against it, on the east side, are calciferous sandstones, impure limestones, and arenaceous shales, belonging to the Tuedian group, which is intercalated between the mountain limestone and old red sandstone formations. Three miles southward of Greenlaw is the ridge of columnar basalt, on the eastern end of which stands Hume Castle, commanding an extensive view over Berwickshire and into Northumberland. The rock is more than 50 feet in height, and, in external form and mineral character, resembles the basaltic whin-sill of Northumberland. May this ridge not be a prolongation of that sill? It is distant from Kylvie, the northern termination of the sill, about 20 miles to the west; but whether it is a vertical dyke, or has been intruded laterally, like the whin-sill, among the stratified rocks, could not be determined.

Papers by the president were read; one on the kaims in Berwickshire, and the other on traces of a formation of primary quartz rock in the south of Scotland.

Mr George Tate laid before the meeting sketches sent by Captain Oswald Carr, R.A., of sculptures in rock temples in Malta, of pre-historic age, having some analogies to the sculptured rocks of Northumberland; and he intimated that

at an early meeting he would bring before the club a full account of the incised rocks of that county.

Captain M'Laren exhibited fragments of an urn and a flint weapon, from a cist at Coldstream, belonging to the ancient British period. He also shewed an old map of Northumberland, made in the 16th century, and it was ordered that this be lithographed for the club.

It was very much regretted by the club, that though the president had come to Greenlaw for the purpose of attending the meeting, he was prevented doing so from an attack of illness.

The second field meeting of the year was held at Cheviot, on the 30th of June. The place of rendezvous was Langleyford, at the base of the hill; and at 10 o'clock in the morning a numerous party was there assembled ready to ascend the Cheviot, or to explore the ravines on its sides. The day was suitable for such an excursion,—sunny, breezy, and tolerably clear. The larger number, under the guidance of Mr William Henderson, ascended to the summit of the hill, which is 2658 feet above the sea level, and which is a dreary flat platform of considerable extent of black peaty matter, furrowed by the heavy rainfalls. Other members examined the Bizzle, a craggy gorge where the pretty *Asplenium viride* grows, and others the Diamond Burn, on the sides of which a variety of igneous rocks are exposed, and particularly crystals of quartz, whence from their resemblance to diamonds it takes its name.

The various parties were re-united at 3 o'clock, and 42 dined in the open air at the foot of the hill. After dinner the members proposed at last meeting were elected, and the following were proposed as candidates:—Rev. Henry Miles, Acklington; Rev. Beverly Wilson, Etal; Rev. Francis Thompson, St. Giles, Durham; Mr John Charles Middleton, Kirknewton, Wooler; and Mr William Hindmarsh, Wooler.

A paper by Dr George R. Tate, on the Botany of the Cheviots, was read. Mr George Tate gave an account of

the geology of the Cheviots and of the stratified rocks on their flanks. Mr Milne Home and Mr Wm. Cunningham remarked on the origin of the terraces on the hill sides ; and it was resolved that a meeting be held specially to examine these terraces.

The third field meeting was held at Ancrum on the 28th July. Mr Jerdon, of Jedfoot, had invited the members of the club to breakfast, but it having rained continuously all the previous night, few were present to enjoy his kind hospitality. After breakfast, the candidates for membership proposed at last meeting were admitted, and Mr Gideon Pott, of Knowsouth, was duly proposed and seconded, for election at next meeting. Mr Jeffrey, of Jedburgh, read a very interesting paper on Ancrum and its neighbourhood. The thanks of the meeting were voted to Mr Jeffrey for his paper, and to Mr and Mrs Jerdon for their kindness, after which the party proceeded towards Ancrum. The weather, which, during the morning had been anything but encouraging, now broke up, and the company enjoyed a most delightful day, all the more so from its being unexpected. Members and visitors also dropped in, till by midday, there was a fair average muster. The members present were :—The President, Messrs. A. Jerdon, A. Jeffrey, John Hilson, Adam Matheson, Charles Anderson, Wm. Elliot, George Hilson, J. Tait, Sheriff Russell, Revds. Wm. Darnell, Thos. Leishman, A. Davidson, Drs. Falla and Mackenzie ; and as visitors, Colonel Wood, Mr James Watson and the Rev. E. Greatorrex.

The first point of interest visited was Coupland Scaur, on the Ale Water, where a fine section of sand, gravel, and clays is exposed. Mr Matheson maintained that these deposits were of lacustrine origin, and that the whole district had formerly been a lake, the outlet of which had been at Sunlaws. Other members, among whom was the president, considered the deposits as marine or estuarine, laid down whilst the last emergence of the land was in progress. There were no appearances of organic remains.

The members next proceeded to Ancrum and inspected

the cross in the centre of the village, a very interesting relic, evidently of great antiquity ; after which, under the guidance of Mr Jeffrey, they examined the celebrated caves, excavated in the precipitous banks of the Ale. Following the north bank of the river, the first cave seen is that called Thomson's cave, after the poet of the Seasons, in which it has been supposed that he used to study, though now it is said that he only once entered it, when he became so nervous that he had to be drawn up to the top of the bank in a chair, a work, considering his corpulence, of no small difficulty. The entrance is now quite easy and secure. The scenery here was very much admired. The brilliant sunshine after the refreshing rain, brought out the beautiful green of the wooded banks to great advantage, contrasting finely with the bright red of the sandstone scaurs. Conspicuous on the top of the south bank stands the manse, where once dwelt the pious Livingstone, and in which the poet Thomson spent some time when a youth. Further up the glen is the parish church, and on the bank above, embowered among luxuriant trees, is the mansion house of Kirklands.

Turning now to the right the company ascended the castle hill, an eminence of basaltic greenstone, on the top of which are the remains of an ancient circular fortress of great extent, the outlines of which are still very complete. Proceeding through Ancrum Park, the garden was first visited. It lies in a snugly sheltered situation, and has recently been enriched with a fine orchard house. A little to the north, on a prominent elevation, surrounded by magnificent trees, several of which are of gigantic dimensions, is Ancrum House, the seat of Sir Wm. Scott, Bart., M.P. for Roxburghshire. Here the members of the club had been invited to lunch at two o'clock, but the arrangements of the day prevented their acceptance of this kind invitation. They were, however, most hospitably entertained by Lady Scott and her sons, Captain William and Mr Henry Scott. The courtesy displayed by the Ancrum family in allowing all respectable

persons free access to their picturesque and beautiful grounds, is highly commendable and worthy of general imitation.

After inspecting the mansion both externally and internally, including the fine old pictures, the library, the drawing-room, and many antique curiosities, the party proceeded to view the group of caves opposite Ancrum Mill. These, like Thomson's cave, are all cut out of the old red sandstone strata, here nearly horizontal and thin bedded. They are situated in a high cliff or scaur, nearly perpendicular, and about 40 feet above the river, which forms a deep pool at the base. They are accessible by a narrow path cut in the face of the cliff, in such a manner that one strong and determined man could hold his ground against an indefinite number of assailants, by lying in wait behind a projecting part of the cliff, and as they advanced pushing them *seriatim* over the precipice into the refreshing waters below. They are cut only a few feet into the rock, but could shelter a considerable number of persons. The interiors are quite clean and fresh looking, there being no marks of fire in any of them, and from the nature of the strata, they appear to have been always free from the dripping of water. In some cases one cave is over another like a second storey, but the entrance is always open in the face of the cliff. Their number is in all thirteen. Their origin is evidently pre-historic, though they have doubtless been used in more recent troublous times.

Part of the company, under the guidance of Mr Weaver, forester to the Marquis of Lothian, passed through the grounds of Mount Teviot, which had also been kindly opened for the day. Near the garden at Harestanes, the spot was noticed where once stood a Druidical circle, from which the place derived its name. It was observed that this spot was midway between two mounds, one called Silverhill, the other Davie Leslie's Knowe, in which, according to tradition, a person so named had been buried, seated in a golden chair. The mounds seem to have been deposited by water, and probably their position relative to the stones was merely acci-

dental. Close to Mount Teviot old garden are the remains of an hospital and a grave yard connected with it, which had stood by the side of Watling Street, the direction of which was traced through the Teviot. Besides some tombstones, a number of carved stones were observed, which had formed part of the building, of which nothing more now remains.

The fourth field meeting was held at Bamburgh on the 25th August. The weather was all that could be desired, and the turn out of members was larger than on any former occasion. Upwards of thirty enjoyed the hospitality of Mr and Mrs Darnell, at breakfast in a large tent erected on the glebe in front of the parsonage, after which they proceeded to view the fine old church, the inspection of which occupied profitably a considerable time. The party then went direct to the castle, examining on their way the effects of the action of the basalt or whin-sill of the rock, upon the strata with which it is associated. All the principal points of interest in, and connected with, this truly magnificent fortress, were minutely inspected, from the top of the keep down to the castle well, sunk in the solid rock to the depth of 150 feet. In the splendid library, where many lovingly lingered over the pages of rare old books, and beautifully illuminated missals, a short but very interesting paper by the Rev. E. A. Wilkinson, being historical and chronological notes relating to Bamburgh Castle, was read. After enjoying from various points of view the extensive and beautiful prospects of land and sea, the company, under the guidance of Mr Tate, walked along the shore to northward, examining in the first place the dunes or hillocks of blown sand, furrowed on the top in some places by the action of the wind, in a manner resembling the ripple marks seen in shallow water, and often found finely preserved in our ancient sandstones. Beyond this, the effects of the action of the water upon the rocks of the carboniferous system, are well seen. Fragments of sandstone, much hardened, are embedded in the trap, which is in many places much debased by the admixture of detritus from the strata through which it has been erupted. Near

the trap, the metamorphism is so great that, in hand specimens it is often difficult to say whether the rock is trap or sandstone, limestone or shale, owing to the transference through the masses, both of aqueous and of igneous origin, of various mineral constituents of either, whilst the trap was in a molten state and the adjoining strata expanded by the influence of its heat. At some distance further on the change effected is not so great, and the beds of sandstone, &c., can be distinctly traced back to the place where their characters become blended with those of the trap. This is perhaps one of the best localities in Britain for the study of metamorphic phenomena, such an extensive area of rock being clearly exposed.

Proceeding onwards to Budle Bay, the well known Posidonia shales were examined with much interest. These shales, of a reddish brown colour, abounding in the shells of the fragile *Posidonia*, associated with the remains of a few land plants, have evidently been deposited in the still brackish waters of an ancient lagoon or estuary, little disturbed by tidal action.

Above these lie the superficial deposits of gravel and sand. The gravel consists chiefly of pebbles derived from rocks at various distances to westward, well rounded by littoral action; together with several of a bright red limestone, which does not appear to have been seen *in situ* within the district, and which some imagine to have been transported from Scandinavia, where a similar limestone is found. It seems more probable, however, that a red limestone occurs in the immediate vicinity, the geological position of which is a little above the *Posidonia* shales, the red hue being the result of metamorphism caused by the trap rocks in the neighbourhood.

The party returned by way of Spindleston crags to Bamburgh, where upwards of fifty dined in the tent. After dinner a long and most interesting paper, illustrated by numerous drawings, was read by Mr George Tate, "On the pre-historic Sculptured Stones of Northumberland and the

Eastern Borders." It was proposed and unanimously agreed, that this paper be printed in the Club's Transactions and fully illustrated, and that to meet the expense the subscription for the ensuing year be 8s.

A letter from Dr Wm. Baird to the secretary was read, intimating the death of Mr R. D. Thompson, one of the founders of the club, and containing a short biographical notice. The secretary was instructed to convey to Dr Baird the expression of the regret of the meeting at the loss of so old and estimable a member.

Miscellanea Zoologica and Botanica, by Mr Robert Embleton, were read. There was also read a paper from the Rev. Wm. Procter, of Doddington, on the age of the volcanic cones in Auvergne.

The member proposed at last meeting was elected; and the following were nominated:—Mr Christopher S. Bell, Denwick, Alnwick; Robert Wilson, M.D., Alnwick; Mr J. Towlerton Leather, Middleton, Belford; Mr James Logan, Newcastle-on-Tyne; and Mr George Webster, Edinburgh.

A hearty vote of thanks was passed to Mr and Mrs Darnell, and the meeting broke up, having spent the day in a most agreeable manner.

At the Dunse meeting on the 28th August, 1862, it was remitted to me to make enquiry regarding certain shells said to have been found in a sandpit at the east end of Bedshiel Kaims. On a recent visit I ascertained from Mr Lithgow, the tenant of Bedshiel, who had seen the shells in question, that they were of a very fragile character. I could find no evidence of their having been embedded in the sand, and no fragments of them, so far as I could learn, have been preserved. I have no doubt that they were recent freshwater or land shells, and that their connection with the sand of the pit was merely accidental. They were evidently not sea-shells, and these kaims are unquestionably of marine origin.

Another remit was made to me by the Newtown meeting, on the 28th May, 1863, relative to the age of the sandstone quarried at East Morriston. I have examined the quarry and found

remains of the *Holoptychius nobilissimus*, *Pterichthys major*, &c., clearly shewing the strata to belong to the upper old red sandstone formation. I have still doubts whether the curious specimen which Mr Curle exhibited at that meeting is of organic origin. In rocks of the same age and general aspect at Prestonhaugh, near Dunse, pretty large stems are frequently found, which have every appearance of having belonged to marine plants, except that they shew no visible trace of carbonaceous matter. It is not, I think, improbable that that specimen is of a similar character, the plant having been of a succulent nature, and the carbon having passed off in gaseous combination through the porous sand before the latter was properly consolidated.

And now, gentlemen, before closing this address I shall briefly refer to one or two subjects which have occupied the attention of the club during the past season.

And first, I must notice the very able and elaborate memoir, by Mr Tate, on the Pre-historic Sculptured Stones of the district. This paper is one which will be read and studied with intense interest by all who delight to trace the works of man beyond the historic period, into those remote ages which connect the archaic with the geological epochs. Although the details, the result of so much and long-continued research, with which our records are enriched by Mr Tate, appear so far as the district of our operations is concerned, to be all but exhaustive, yet we must all perceive that the subject is anything but exhausted. It is in fact but in its infancy. Further discoveries may, and doubtless will be made, not only in Argyleshire and elsewhere, where similar remains have been found, but also in our own district. We want, and may have to wait long for a key, which, like the famous Rosetta stone, will enable us to read and interpret these remarkable inscriptions, engraven so long ago upon the Northumbrian rocks. Whatever may be their import, now so mysterious, they cannot fail to prove, when their meaning is discovered, of very high interest. In the meantime, I would earnestly urge upon all the members of the club to do

their utmost to extend this field of research, so ably opened up by our excellent secretary. Let every one study the subject and bring forward to the test of discussion his theory, if he has formed one, taking care that it is well and stoutly supported by facts, and I have no doubt that this recondite matter will soon yield to enlightened and unbiassed perseverance.

Those remarkable ridges of sand and gravel known by the appellation of "kaims," have again occupied the attention of the club, and from the difference of opinion which still seems to prevail regarding their formation, we may expect that they will be a standing subject of enquiry and discussion for some time to come. Since my paper upon the subject, read at the Greenlaw meeting in May, was written, I have revisited and re-examined Bedshiel Kaims and others in the district. These appear to me to have been accurately and sufficiently described in the various papers and notices regarding them, which form part of the Transactions of the club. It only therefore remains satisfactorily to account for the phenomena presented by them. Every visit impresses me more and more with the idea that the views I have stated as to their formation are correct, but I shall not much regret if my theory be swept away, provided that it is replaced by a better. It must always, however, be borne in mind that the sea has stood at a level relatively higher than that of the highest of these kaims, and that during its recess it could not fail to lay down and subsequently "lick into shape," deposits similar to those in question. It has always done so and the same processes are going on at this day. We find similar ridges and mounds at all elevations, from at least 700 feet as at Bedshiel, down to below sea level as in the case of the Chesil bank off the coast of Devonshire. Sandbanks, now consolidated into sandstone, are known to exist in the carboniferous system, and I should not be much astonished were a fossil kaim to be discovered in the old red sandstone, though it is probable that such a ridge, shaped between wind and water by the action of tides and currents, and thereafter

raised above sea level, would be at least partially obliterated during the subsidence to which this ancient formation has since been subjected, before it could be protected by subsequently formed deposits. Kaims *must* have been formed during the glacial period as well as at all other times, but I maintain that the agency of water alone is sufficient to account for all the appearances exhibited by the Bedshiel and many other kaims. Laden icebergs grounding upon a ridge like the Chesil bank, would, doubtless, to some extent, force it out of shape, and we would find disturbed stratification of the sand and gravel, associated with confused deposits of clay and boulders, left as memorials of their visits. But we find no such deposits connected with the Bedshiel kaims and others at a high level, and the boulder clay is a formation which we all know to be of great tenacity and capable of resisting the action of water as well as, if not better than, the hardest rock. Upon the whole I am of opinion that these high level kaims were formed and raised above the water prior to the glacial epoch, which, on this view, must have occupied a part of the unnumbered ages which have elapsed between the time of their formation and the commencement of the historic period. If I am correct in this opinion, records of the glacial period may be looked for in connection with the lower lying kaims, just as we find them marked upon rock surfaces *in situ* as well as on travelled boulders; but, however great the quantity of ice swept by currents during many ages, over the then submerged portion of this district, it should be remembered that these ice-streams were but of occasional occurrence when compared with the continuous working of the great western current which bore them along, conjoined with the bi-diurnal ebb and flow of the tides, even leaving out of consideration the powerful mechanical action of exceptional high tides or of great storms.

Although no remarkable novelties in botany or zoology are reported as having been observed at any of our field meetings during the summer, such being indeed scarcely to be expected considering how often and carefully our district has

been already examined, yet I am happy to say that the study of these sciences is pursued by many of our members as enthusiastically as ever. The very able paper by Dr George R. Tate, on the Botany of the Cheviots, is good evidence of this.

It gives me much pleasure to state, that we may expect, in due time, a paper from Mr Wilson, on the curious crypt of Bamburgh Church; and, also, a general paper on Bamburgh, by Mr Clark.

In conclusion, I have to thank you for conferring upon me the high, and I am sorry to say, rather unmerited honour of the presidency of the club, for the past year,—and, to congratulate you upon the present prosperity of our society, and the continued, and, in some departments, even increasing interest taken in the subjects of its investigations.

The following is a statement of the income and expenditure of the club for the past year:—

INCOME.

Balance in hand Sept. 23, 1863.....	£7	2	0
Arrears received	8	14	0
Subscriptions for 1863.....	48	18	0
Do. 1864.....	2	2	0
	<hr/>		
	66	16	0

EXPENDITURE.

For Lithography, &c. for 1862....	£18	5	6
For Printing, Lithography, &c. for 1863.....	49	4	8
	<hr/>		
	67	10	2

Balance due the Secretary.....	0	14	2
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The number of members at the close of last year was 207; we have lost eight members during this year from death and resignation, and fourteen new members have been elected, so that the present number of members is 213.

Greenlaw.—The Town and Parish. By REV. JOHN WALKER, of Greenlaw.

THE small town of Greenlaw, although perhaps at no period of its history, larger than an agricultural village, is a place of considerable antiquity; and there is a certain degree of interest besides, which seems to me to attach to it, as an exponent of the equable amount, from age to age, of the claims of husbandry on an auxiliary population, for it seems to have remained in a great degree stationary, —scarcely even to have altered its form during eight centuries, while so many similar places have disappeared wholly, and others have been rising into populous towns, the busy seats of industry and wealth.

Indeed, if Greenlaw, as there is reason to believe, was the seat of some district authority under the Saxon kingdom of Northumbria, it has probably rather declined in importance, subsequently to, and in consequence of, the incorporation of the district with Scotland.

Shortly after that arrangement, we find it in the possession of a nobleman who had no residence upon it, and who seems to have immediately allocated a large part of it among his military retainers. In the early part of the twelfth century it came, along with Lauderdale, the country about Earlstown and a large part of the Merse, into the hands of Cospatrick, the first Earl of Dunbar. This nobleman, the son of Waltheoff, or Waldeve, a baron of Cumberland, appears to have accompanied Edgar Atheling into Scotland, and to have been received into the service, and eventually into the confidence of King Malcolm, and raised by that monarch to offices of high trust and power. His only residence however, south of the Lammermoors, appears to have been at Lauder; and the lands of the parish of Greenlaw, with the exception of the baronies of Greenlaw and Whiteside, were occupied by his military followers.

The ancient barony of Halyburton was given, or the previous possession of it was confirmed, to Truite, whose name seems to indicate Saxon descent; and the barony of Lambden was given to John de Striveling, a knight of Northumberland.

The third Cospatrick, Earl of Dunbar and Earl of March, gave the baronies of Greenlaw and Whiteside to Patrick de Dunbar, his second son. This nobleman settled at Greenlaw, and obtained permission of Kelso Abbey, to which the

church of the parish had been gifted, to have a private chapel in connexion with the residence which he had built for himself, and which was called the "Lord's House." Some remains of this castellated building under the name of the Tenandry, were visible in a field to the east of Greenlaw, about fifty years ago. Indeed its substructions were dug up only a few years since, by the present tenant of the land.

The son of this Patrick de Dunbar, under the name of William de Greenlaw, married his cousin, the daughter of Waldave, or Walleve, fourth Earl of Dunbar, and received with her the barony of Hume, as her marriage portion. This gentleman appears to have had issue by a previous marriage, and the lady was a widow also, whose first alliance had been in the ancient and great, but dissatisfied and unfortunate family of Courtenay.*

The succession to William de Greenlaw's Greenlaw properties seems to have been for some generations in the children of his first marriage, as we find the names of Roland de Greenlaw and others, attached to deeds of that period; but subsequently, all his properties seem to have fallen to the children of his second marriage, by which he was the progenitor of the numerous and powerful border family of Hume, and to have continued uninterruptedly in their possession up till the time of the troubles which overtook the family in the regency of the Duke of Albany, after the disastrous fight of Flodden.

As a result of these embarrassments which would not all be removed in 1522, when the family was restored to its honours and estates, the baronies of Greenlaw and Whiteside came into the possession of the Humes of Spott.

Mr. Hume, of Spott, whom James VI., of Scotland created Earl of Dunbar, obtained from his sovereign, a royal charter (anno 1596) which was ratified by parliament (anno 1600) as proprietor of the barony and town of Greenlaw, to the effect that "the town of Greenlaw being a central place in the county, and so convenient for holding courts, publications of all summonses and royal letters, &c., should be erected into a free burgh or barony, with privileges equal to the privileges of the royal baronies, and that all such proclamations, &c., should be made at the 'Mercat Cross' of the said burgh of old Greenlaw, as the primary and principal

* The motto will be recollected which was assumed by this old crusading house, when it found itself on the roll of the English nobility "Ubi lapsus, et quid feci?"

burgh of the whole county of Berwick." And, although in 1661, immediately on the restoration, when the lands of Hume of Spott, had been seized by the creditors of that family, a private bill was passed through parliament, making Dunse the chief burgh of the county, and afterwards, in 1670, there was an act which divided the honours of Dunse with Lauder; yet, on the revolution, the parliament of Scotland (anno 1696) repealed the acts of 1661 and 1670, and declared the town of Greenlaw to be the head burgh of the shire of Berwick—a position which, though sometimes menaced, it has retained since that time.

Previously to 1696, the baronies of Greenlaw and Whiteside had passed from the Humes of Spott, into the possession of the family of Marchmont, created at the revolution Baron Polwarth and subsequently Earl of Marchmont, a branch of the Wedderburn Humes by the heiress of John de Polwarth and the Countess Ida, whom we find, by the *Liber de Melrose*, to have been in possession of Polwarth in the 12th century, and they are still in the occupation of the descendant of that old family, Sir Hugh Hume Campbell, Bart., of Marchmont.

The barony of Halyburton also appears to have remained long in the family of that Saxon knight whom the first Cospatrik placed or confirmed in the possession of it, although they ceased, at an early period of their occupation, to make it their usual residence. About the middle of the thirteenth century Philip de Halyburton married the daughter and heiress of De Vaux, of Dirlton. This De Vaux, like his chief the Earl of Dunbar, of a Cumberland family, was descended from Hubert de Vallibus or De Vaux, Hubert of the Gills, or Gillsland, and along with two brothers who took the name of Gillsbie, or Gillespie, is said, in a manuscript topographical and family history of Cumberland, which I have seen, and which was written by Mr Denton, a Tower lawyer, in the time of Queen Elizabeth, to have passed to the Court of Scotland in Cospatrik's train. When the struggle came between the Earls of Douglas and Dunbar as to whose daughter should be the wife of the unfortunate Prince of Scotland, the Halyburtons and Humes deserted the cause of their feudal superior, and under the patronage of Douglas their fortunes prospered. On the final ruin of the Earl of Dunbar, they were both received to hold their lands immediately from the crown, and some time afterwards (in 1440 and 1473) were created Lords of Parliament.

Of the family of John de Striveling, who by the name of "De Lambdene," possessed the barony of Lamden, I have been able to ascertain very little. Signatures of members of the family occur in charters of the thirteenth and fourteenth centuries which would seem to prove that they continued to occupy their place, for several generations, in opulence and honour. They seem, like the Cockburns of Langton, not to have been in alliance with the Humes in the defection of that family from the feudal superior and the head of their house, in the fifteenth century, and to have suffered heavily in the maintenance of their honour. In the sixteenth century their barony appears to have been broken up, and the chief portions of it were in the hands of Lord Hume and members of his house.

The troubled state of Scotland during the Commonwealth, and especially in connection with the restored rule of the Stuarts, during the latter half of the seventeenth century, seems to have affected this district severely. Old estates, some of which have now been reunited, were broken up, the old proprietors disappeared, new names came and went, and until the middle of the sixteenth century, changes in regard to considerable portions of the property of the parish appear to have been incessant.

ANCIENT REMAINS, &c.—Very few memorials of its ancient buildings remain in the parish. The Parish Church, or rather a part of its present walls, is ancient. It was given by the first Earl of Dunbar to the Abbey of St. Mary, of Kelso, about 1140, and seems to have been repaired or mostly rebuilt, previously to 1700, about 1696. About that time were built the present steeple; and westwards from it another building in extent and form resembling the church, and in line with it, for accommodating the business of the county and the courts of law; the apartments of the steeple from the ground to its third floor, were used as the county prison.

The prison and the courts of law have been removed to separate and new buildings, erected about thirty years ago, and the remains of the old county buildings completely cleared away.

About fourteen years ago, when a stove by Haden was placed in the church, it was found, on making the drain required for cold air, that, as it stands at present, it has three floors, and that on the lowest, about three feet under the present floor, there have been interments and are still

monumental stones, one of which required to be lifted and removed in excavating the drain.

There were also two chapels belonging to the Abbey of Kelso in the parish, at Halyburton and Lambden; but of these, and their burying grounds, and the populous villages connected with each, no trace whatever remains. There was also another chapel in the parish at Rowiestone, which seems to have been connected with the Abbey of Melrose, and this too has been completely removed. Its burying ground, however, was discovered about nineteen years ago, when the field in which it lies was being drained. It is a square surrounded on three sides by fine old trees; but so completely, owing to the frequent changes of the agricultural population, had all memory of it been lost, that the original purpose of the enclosure was quite unknown.

A small part of the wall of an old building called Greenlaw Castle was standing about fifteen years ago, in a field still called the Castle Field, about half-a-mile to the east of the town. That also, however, has been removed, and ploughed over, and a stranger crossing the field would not now know that a building had ever occupied its site. Its last occupant, I believe, was Robert Home, Esq. of Greenlaw Castle, and it was the birthplace, in 1746, of the eminent London physician, Sir Everard Home.

On the moor to the north of the town, there is an interesting relic of unquestionably very ancient times. It is a fortified trench called Maritz Dyke, which the plough has defaced over large portions of its traditional course, but which can be traced continuously, and very distinctly, for nearly a mile across the moor. It runs in a westwardly direction towards Boonhill, and towards an old camp called "Hare-faulds," on the hill of Blythe, in Lauderdale. Some portions of it have been obliterated by the cultivation of the soil only a few years ago, but it can still be farther traced at a place near to Thorny Dyke, in the parish of Westruther; also, on the moor in the farm of Corsbie, and on the descent from the camp on Blythe Hill; and there is a tradition that it extended eastward as far as the Tweed, near to Berwick. There is on the moor, also, about two miles west of the town, and in evident connection with it, on a bold point at the junction of the Fangriss with the Blackadder, an ancient military station or British camp, called "Blackcastle Rings," very strongly fortified with a double rampart and fosse on its north and only assailable side, and interesting, as still shewing

quite distinctly, a protected road from the entrenchment, which is destitute of water, down to the river.

Of the age of this memorial of old struggles it is, of course, impossible to speak with certainty. But the line of the Whitadder presents appearances of having, at one time, been fortified also. If we admit the remains on Cockburnlaw to mark the site of a military station, then, there is a strongly fortified camp at Priestlaw; there is another, a small camp above the defile at Crichness, and the top of the hill over Penshiel appears to have been fortified, and may have been used as a speculatorium, from which the whole course of the valley and all its approaches from the east, could be seen and watched between the stations of Crichness and Cockburnlaw.

The lines on the Whitadder and Blackadder, and the line of the Catrail, thus probably all belong to one system, and carry the mind back to the sixth century—to the Saxon Ida, or Edwyn—and the resistance, on the Catrail, effectual, offered by the Britons of the Romanised province of Bernicia to the westward pressure of the invaders.

There is a curious mound by the side of the Blackadder, on the north of the stream, called "the King's Grave," which may be a natural eminence, or may have been formed by the debris of a rush of water through a ravine nearly opposite to it, but which certainly has the appearance of having been stirred—dug into—on a part of its extent, the tradition connected with which, seems to carry the mind back to the same stern times.

The residence, according to this old tale, of a British Chief was surprised by Saxon assailants in his absence, and all who belonged to him were murdered or carried away, with the exception of one infant child who was a twin, who happened to have been carried out at the time in the arms of his nurse, and was by her concealed and preserved.

Many years afterwards this British Chief met a Saxon army, and the place of meeting must have been some where near to these lines. It was proposed by the Saxon leader and agreed to, that the matter in dispute between them should be decided by combat, one champion being chosen from each army. The Saxon champion was the Briton's stolen son, whose life had been spared by his enemies when they put to death the other members of his family who were in their power. It was his twin brother who represented the British host—and the two kinsmen both fell—mutually slain, and lie buried, as the tradition which I seek to give says, under

the large and contiguous cairns on the "Twinlaw," a prominent eminence of the Lammermuir range, a few miles to the north-west. The armies having afterwards engaged in battle on the southern descent of the Lammermoors, near to Wedderlie, the British Chief was himself either mortally wounded or slain in the action, and, on the route of his dispirited army, was interred in that lonely mound by the Blackadder.*

There may have been no foundation in real occurrences for this old tradition. It may have been invented to explain the name "Twinlaw"; and I understand that in the ancient British "twin" has nearly the same meaning as "law," and signifies a hill. At the same time, where the population of a district are allowed to continue in it, tradition lingers long; and it is right, and really interesting, to state that the cairns were opened some years ago by Mr. Spottiswoode of Spottiswoode, the proprietor of the mountain, and were found each to contain one stone coffin.

Rocks, &c.—Of the geognostic features of the district I am not competent to speak with any authority; and the points open to observation which I am acquainted with, seem to me not to afford sufficient data to answer conclusively the few curious questions which may arise. In the northern part of the parish the formation seems to be uniform with that which generally prevails in the south base of the Lammermoors; and the southern portion, as it passes into the Merse, seems to be of the same character, with the exception perhaps of the sandstone. Its higher grounds and eminences have been raised nearly as they are now about the time when the agency

* Some stanzas of an ancient but modernised ballad referring to this matter are presented, it is believed for the first time, in the account of Westruther Parish in the new Statistical History of Scotland. The following, with some others, were kindly given to me by a lady, who took them from the recitation of an aged person, who was their only custodier:—

A Chieftain of the Saxon band,
Spake out wi' pride and might;
And daured the bauldest o' the Scots
Out to a single fight.

Their leader had a youthfu' son;
Flower of the Scottish band;
Wha quickly wi' him did agree
To fight him hand to hand.

Baith armies stude in sair suspense,
This combat for to view;
And the Scottish leader steppit forth
To bid his son adieu.

.

"Cursed be the sword, my dear brother,
That wounded thee sae deep;
A dreary tryst ha'e we this day;
But side by side we'll sleep."

It was beside the Watch Water
Their spirits passed away;
And on the top o' yon high hill,
They buried their comely clay.

Frae the Watch Water to the hill top
They've ranged them in a raw;
And frae ae hand till anither
The smooth burn stanes did thrav.

And they biggit two cairns on the heather,
They biggit them round and hie;
And they stand on the Twinlaw hill,
Where thir twa brothers lie.

of fire was active in the Hume district, and when perhaps the Lammermoor range received a considerable elevation, but before the appearance of its porphyry summits.

Several trap dykes can be noticed passing north-eastwards through the strata which appear to come from Hume, and from the hills of East Gordon and Rummeltoun; and the late formation of the Berwickshire Railway has both displayed some of these favourably, and has laid open large deposits of amygdaloid and other volcanic products.

Some difference of opinion, it appears to me, may reasonably be entertained with respect to the age of the sandstones in the district. While to the west of the town and at Greenside they belong to the old red, the stone in the quarry at Catmoss, and also that down the river on the border of the parish of Fogo, seem to require to be classed differently.

An extensive deposit of peat moss, covering fully 400 acres, occurs in the moor to the north of the town. Its general appearance is barren, but there are patches in it of deep and unsafe marsh, which may contain plants that have not as yet been gathered there.

Along the northern edge of this peat field, over its whole kaims extent, a peculiar ridge-like formation of drift is very noticeable, stretching, almost continuously, for about three miles athwart the sullen level of the moor. It has somewhat the appearance of a railway embankment, and perhaps challenges attention the more that it makes its appeal to thought in a scene peculiarly monotonous and dreary.

Opinions have been formed and expressed respecting the nature of this formation, which it is now unnecessary to recall and state. The closer attention which has been paid to it of late, and the extent to which it has at one place been laid open, have put an end to all difference of opinion here. It is now, I believe, unreservedly admitted to be an aqueous deposit, and the only question which seems to remain in a doubtful state has respect to the mode of its formation—how water, a current or currents, has been guided to deposit and build up a narrow bank of gravel or sand to a height of 50 feet, with a breadth in some parts of not more than 140 feet at the base, on a level plateau, not in a straight line, nor in a sinuous line, but in every awkward variety of the crooked form—one important bend being nearly if not quite a right angle.

The writer of the account of Greenlaw Parish, in the new Statistical History of Scotland, suggests the only theory of

its formation which will satisfy, it humbly appears to me, the conditions as they exist, and may be observed and tested. The suggestion, if my recollection be distinct—for I have not the paper beside me—is not very lucid—is confused by being mixed up with irrelevant matters ; but the solution which it affords is direct and simple, and sufficient, satisfying completely several of the conditions of the deposit—indeed all of of them that I have been able to ascertain with certainty. Assuming that wood brought together by water is, as with coal, the nucleus, or even to a greater degree, the mass of our peat mosses, he regards the edge or outer side of that field of wood as supplying the protection which sand or gravel carried by a current over it would require in order to settle down and be at rest. The various *débris* which running water carried with it over the surface of the wood field would thus accumulate under the shelter of its edge until it reached the level of the wood, and entirely in the same way as hills of similar *débris* which we find plentifully deposited under the shelter of rocks, and forming what are called “tails” to them. Now if we suppose the flow of water to have been withdrawn—made to cease—and the wood left to decay, and cover itself with its peculiar vegetation in a marsh, it will be felt that it would sink as it became consolidated—its surface would become depressed, as it is now, under the level of the drift which would gradually assume its present proportion as a ridge or kaim.

A theory having more perhaps to commend it at its first statement, but really in the conditions inadmissible, proposes to explain the formation of the deposit by the action of two nearly parallel and converging currents. But while it seems not easy to advert to the tract of land and believe that two streams of water so related to each other and co-operating could flow over it in the line of the kaims, there is a farther objection to it which appears to me to be conclusive. On this theory the lower base of the kaims would be spread widely, and would underlie the peat moss for some, perhaps a great distance. This however, is not the case. The peat has been cut plentifully close to the edge of the kaims, and it passes down, as beside a wall, to the white sand which forms the floor of the peat moss.

The range of the kaims does not terminate at the north-west point of Dogden Moss. On reaching that point they turn southward and covering the west end of the moss, and throwing a branch called the “Battle Hills” along deep moss

towards the farm of Harlaw, they pass through Hexpath Dean and the mosses there, and Crosbie and Legerwood Mosses, and the parallel mosses of Gordon and East and West Morriston to Purveshaugh near Earlstoun.

The trap dyke which forms the eastern side of the Hexpath Dean is loaded heavily with the drift of which these kaims are composed, and we are at once satisfied with the reason that appears and accounts for this. The wall of whinstone arrested and protected, just as the field of wood on a line with it would do, the *débris* which a current of water applied to it.

But if a mass of wood may thus, like a rock face, shelter and arrest the *débris* which running water lodges behind it, then, it seems evident that as the wood decays and becomes depressed from its first level and consolidates, a change will gradually be effected in the drift deposit which partly leans upon it. Gravitation will cause such a change in the kaim as may be required to adjust it to its altered relations. And it is the evidence of this change perfectly open to observation, which first satisfied me years ago, of the correctness of the theory which I desire to bring into discussion.

Beautifully stratified as these kaims are when the substance of them consists of sand or minute gravel—distinctly often, as in the stripes of a ribbon, in the centre, and on the side away from the moss; on the side next the moss the strata are mingled together and undistinguishable; and while examining the deposit in vain for shells, I have been surprised at the depth at which observed contents of the upper strata were found.

Stones too, of very considerable size, and oblong shape, are plentifully found in that evidently moved portion of the kaim, not as water would certainly at first deposit them, but standing on end, and even frequently inclining outwards, shewing both that there has been a movement and that the mass of matter adjusting itself has been considerable.

The kaim, as a further proof of adjustment, overlaps the moss, its outer edge rests on the underlying peat.

Again, if the kaim was formed by water in the manner which my observations lead me to defend—for the theory is not mine—then the present height of the kaim may be taken to indicate the comparative depth of the deposit of moss which it skirts. And this is believed to be the case. The deepest part of the moss is understood to be that which belongs to the Parish of Polwarth to the south of Cattleshiel, where the kaim is higher than at any other part of the Dogden deposit.

The terminal portion of a system of kaims frequently consists of patches of peat moss completely landlocked, or a congeries of mounds, the direction and relation to each other of which cannot be satisfactorily accounted for by the action of running water alone; but the whole phenomena seem capable of a simple explanation when the additional element is added of the probably rugged nature, with outlying masses, of a great field of submerged wood.

Also, such a deposit of wood would scarcely in any circumstances be uniformly solid. Entire openings even might be expected to occur in it occasionally; and these openings, being filled with gravel by the current flowing over them, would present just the appearance of those isolated, often conical, mounds of gravel which occur in the mosses of this district.

Miscellanea Zoologica et Botanica. By R. EMBLETON.

MERGUS ALBELLUS; The Smew. This species of the duck family is one of the rarest of our winter visitors, and during the last twenty years only two adult specimens have come under my notice. The one in my possession was shot a few yards from my own house, in the month of February last.

INACHUS LEPTOCHIRUS; Slender legged Spider Crab. This is one of the rarest of the British decapods. The male is remarkable in having a round polished tubercle on the thorax, which mine possesses; and which is peculiar to this genus, and only known to exist is another species, the *Inachus thoracicus* of the Mediterranean.

ACMÆA TESTUDINALIS; Rocks at Beadnel.

SAMBUCUS EBULUS; Dwarf Elder. In a lane behind the Church at North Sunderland.

CAMELINA SATIVA; Gold of Pleasure. Plentiful in a field at Beadnel this year amongst flax.

ALYSSUM CALYGINUM; Near Warkworth. To John Chrisp, Esq., I am indebted for specimens of this doubtful native.

BRASSICA NAPUS; The Turnip. Specimens of the true plant have been forwarded to me by my friend, John Chrisp, Esq., from Coquet Island. Long before there was any cultivated ground, Mr Chrisp was aware of the locality. It still retains its hold, and is looked upon as a weed in the garden round the light-house.

Beadnel, August, 1864.

Remarks on certain Traces of a Formation of Primary Quartz Rock which appears to have at one time existed in the South of Scotland. By WM. STEVENSON, Dunse.

IN the course of some investigations regarding the composition of the Old Red Sandstone Conglomerate which crosses the eastern part of the Lammermoor chain and extends along its southern flanks, the writer was surprised to find a remarkable change in the character of the pebbles of which the conglomerate consists, take place near its south-western limits, where it is overlaid by the sandstones and clays of that formation. In all the localities among the Lammermoors where the Old Red Conglomerate is seen, it is found to consist entirely of water-worn fragments of greywacke and felspar porphyry derived from the neighbouring hills. Quartz pebbles are rare, as might be anticipated, from the small proportion which the quartz veins amongst these hills bear to the other mineral masses. In the course of the Blackadder, however, immediately above Greenlaw and along a line running in a north-easterly direction by way of Kyle's Hill, Polwarth Mill and Choiselee, the conglomerate contains a very large quantity of white and brown quartz pebbles, all much rounded by attrition. These have a peculiar aspect, differing both from the white crystalline quartz so common in the mica slate formation of the Grampians, and the granular quartz of Islay, Braemar, &c. Their parent rock has evidently been a primary sandstone, some of the beds of which were white and others reddish brown; and these strata have undergone an amount of metamorphism equal to that which any of the primary strata in the Highlands of Scotland have experienced. For many miles to eastward of the above named localities these pebbles are strewn over the surface in great numbers, and enter largely into the composition of the superficial gravelly deposits. This is especially the case along a line extending E.N.E. from Choiselee, these scattered pebbles having been mainly washed out of the conglomerate in the neighbourhood of that locality.

A consideration of these facts naturally led to the question, where did these quartz pebbles originally come from? A careful examination of the Old Red Conglomerate of Lauderdale shewed it to be composed almost wholly of materials derived from the adjoining greywacke. Scarcely a pebble of quartz was to be found. A survey of the whole range of hills to the eastward of Lauderdale, resulted only in the negative

discovery that they could not possibly have furnished the pebbles in question. On making further inquiries, the writer was informed by Mr Kemp of Galashiels, that a great quantity of similar quartz pebbles was scattered over the fields near Belshes Mill, on the banks of the Ale water in Roxburghshire. In examining that place it was seen, that the pebbles there had also been washed out of the conglomerate which is exposed for a short distance in the bed of the river. It is worthy of remark, that this locality is situated exactly in the prolongation of the N.E. to S.W. line, before referred to, as marking the direction of the quartzose portion of the conglomerate. Over all the tract of country between the Lammermoors and Cheviots, as well as at many localities among the latter group of hills, quartz pebbles are met with in greater or less plenty. They abound most in lines running nearly E.N.E. from those places where similar pebbles occur as constituents of the conglomerate; this having been the direction of a great marine current which flowed over this part of the country before its last emergence from the waters.

It thus appears, that prior to the deposition of the Old Red Sandstone Conglomerate (and perhaps also of the Lammermoor greywacke) there existed, somewhere in the western part of the counties of Berwick and Roxburgh, at least two or more patches or insulated portions of an older formation of Quartz Rock. Of these, however, there appears to be not a vestige left *in situ*. The axis of this formation probably ranged in the direction before referred to, *i.e.*, N.E. to S.W., and perhaps future minute researches along the line indicated may throw additional light upon the subject. A considerable portion of it must have been exposed to the action of the waters at the time when the Old Red Conglomerate of Greenlaw, Belshes, &c., was forming. It appears strange, considering its almost unquestionably higher antiquity, that no fragments derived from it have as yet been found entering into the composition of the greywacke rocks of the Lammermoors. True greywacke conglomerates occur at various places among the hills, but these contain only minute pebbles (rarely exceeding the size of horse beans) of white crystalline quartz, clay-slate, and felspar porphyry, all of which might be, and probably were, furnished by the disintegration of the mica and clay slates, &c., of the Grampians or of a southern extension of the same formation. There is one bed of greywacke conglomerate, however, among the Lammermoors, which, though not containing pebbles of exactly the same

character as those of the Greenlaw conglomerate, yet deserves special notice, from the evidence which it furnishes of the existence of granular Quartz Rock in the south of Scotland prior to its formation. This stratum, to which the attention of the writer was first called by the late Miss Darling of Priestlaw (a lady who took much interest in geological pursuits), is about four yards thick, nearly vertical, and occurs between beds of arenaceous greywacke at Johnscleugh, near the source of the Whitadder. In position it is strictly conformable to the strata with which it is associated. It contains, besides fragments of clay-slate, felspar, and white crystalline quartz, *rounded masses of granular quartz* of all sizes up to five or six inches in their longer diameters, the whole being firmly cemented by a very hard base of fine grained greywacke. Although these pebbles differ in appearance from those found in the Old Red Conglomerate of Greenlaw, &c., it is not improbable that both may have been derived from strata of the same formation which once existed in the south of Scotland. Such appears at least much more likely, than that they should have been transported from Islay, Killiecrankie, or Braemar, the nearest localities where a similar rock is now found *in situ*.

If the above inferences are correct, we have a clue to a more distinct knowledge of the geological structure of this part of the country. The subject, though obscure and somewhat difficult, is assuredly not without interest, relating as it does to an era of inconceivably remote antiquity in the history of this portion of our planet.

Since the foregoing paper was written, the writer, struck by the resemblance of the quartz of which these pebbles consist to the auriferous quartz of Australia, California, &c., sent some samples to Dr. Stevenson Macadam for quantitative analysis. Dr Macadam reports that the most refined tests failed to shew the slightest trace of the presence of gold. The quartz is very pure, consisting of—

Silica,	99.37
Oxide of Iron,	0.56
Carbonate of Lime,	0.07

100.00

On Bedshiel "Kaims," and their relations to similar deposits to Eastward and Westward. By WM. STEVENSON, Dunse.

WHEN the Berwickshire Naturalists' Club last met at Greenlaw, on the 20th July 1858, the Members, under the able guidance of the Rev. John Walker, enjoyed under very favourable circumstances, a ramble up the valley of the Blackadder, and a visit to Bedshiel Kaims, certainly the most remarkable of their class to be met with in Britain. A long examination and much interesting discussion took place as to their origin. I then stated the opinion, which I still hold, that they were formed of materials deposited under the waters of the sea at a time when it stood *relatively* about 700 feet above its present level,—these materials having been subsequently shaped into their present form by the action of tidal and other currents during the process of emergence of the land. The Club again visited the locality from Dunse, on 28th August 1862, but the torrents of rain which fell whilst the party were upon the ground, rendered the inspection very hurried and unsatisfactory. On the first occasion I was requested to contribute a paper upon the subject, which I agreed to do. For this purpose a map of the district showing the various levels was essential. The slow progress of the Ordnance Survey has hitherto prevented me from complying with the wishes of the Club, but I have now the pleasure of exhibiting a map composed of six of the Ordnance contoured plans on the 6 inch scale, representing a tract of country extending east and west from about Edrom and Swinton to Westruther, and from north to south beyond Abbey St. Bathans and Cranshaws to nearly two miles south of Greenlaw, and comprising an area of twelve miles either way, or 144 square miles. In order to shew at a glance the levels above 600 feet, the map has been coloured according to the contour lines, at Messrs W. & A. K. Johnston's establishment in Edinburgh, thus:—above 1000 feet, *red*; 1000 to 900, *orange*; 900 to 800, *yellow*; 800 to 700, *green*; and 700 to 600, *blue*. The lower levels are left uncoloured.

The materials of which these Kaims consist are sand and gravel, the former predominating at the east and the latter at the west end. The gravel has been derived from the Silurian and Devonian strata to the west and N.W. The stratification, as might be expected if the theory laid down is correct, is very irregular and frequently inclined at various angles. No organic remains have hitherto been found in the sand or gravel.

Let us glance for a little at the physical condition which prevailed in this part of Berwickshire at a time when the sea stood *relatively* somewhat more than 700 feet higher than at present. A shallow sea covered the district of which the Kaimes and flat mossy ground are now the most prominent features. A few miles to the W. and N.E. rose the Silurian hills of the Lammermoors, flanked by Devonian strata, and attaining a height of at most a little more than 1000 feet above the then sea level. Deep sea extended far and wide to the S.E., E. and N.E., narrowing towards the S. (and perhaps S.W.), where communication was kept up with the Atlantic by means of deep sounds dividing lofty insular masses. Through these sounds rushed continually in an easterly direction that great and ancient current, the prototype of our modern Gulf Stream, charged probably at that time with icebergs and floes bearing along their loads of far transported clay and boulders. But whether or not the sea in this latitude was *glacial* at that time, the existence of this current from the west is demonstrated by the well marked phenomena of "crag and tail" so frequently to be met with, but more particularly from the fact that *all* the boulders, gravel, &c., strewn so profusely over the district, have been derived from rocks found *in situ* to the westward of the localities where they occur. There are some grounds for believing that the sea stood for a considerably lengthened period at, or a few feet above, the 700 feet level; and that thereafter the emergence of the land was for a time more rapid. Further researches will be required to clear up this point. During this emergence the ridges of the Kaimes began to appear above the water as long, narrow, gravelly, and sandy spits, exposed to continual alterations of form by the combined action of the great western current, tidal waves and storms, until they were finally left high and dry, presenting the remarkable aspect which they now exhibit. The shaping action of these ancient waters is beautifully recorded on both the internal and external sides of the ridges. In some places the appearances are so fresh looking as to induce one to fancy that the tide had just ebbed to return again in a few hours to lave the bases of these bulwarks formed by itself, as it were in sport, during its prosperous career; but now standing as they did at the time of the last ancient pre-historic flow, as firm barriers to tell the advancing sea "hitherto shalt thou come, but no further."

To describe the wonderful changes in the configuration of

sea and land produced at this stage by the elevation of the latter to the extent of comparatively a few feet, would be dry and tedious, though their study upon the map, compared with field observations, will be found to be full of interest and instruction. I shall only at present refer to the marked effect produced upon the tidal action by the shutting up of the sound between the Derrington Hills, and, at a somewhat later period, of that between Kyles Hill and Langton Lees. The stoppage of these channels of ingress and egress of the tidal waters, furnishes, I conceive, the principal key by which to account for the singular forms of the Kaims as they at present appear and have done for unreckoned ages.

Between two and three miles to eastward of Bedshiel Kaims we come upon two very interesting examples of the same class of deposits near Raecleughead. The summits of these ridges are also exactly 700 feet above the present sea level. The top of the hill on which Raecleughead farm-house and offices now stand, must at the time of emergence of these Kaims have been a small island, rising only a few feet above the sea. A rather deep, but very narrow sound divided this from the hills to the northward. A small but well marked terrace is cut into the northern face of the isolated southern hill at the 700 feet level, but as this *may* have been formed by man, though for what purpose it is not easy to imagine, it may be referred to at present rather as a curiosity than as anything of value as evidence in connection with the present subject. The picturesque dell to northward shows most beautifully its origin in the scooping out and removal by the tidal waters, of the soft and incoherent materials through which it has been excavated. An ancient cross fault with a downcast to the south of great extent, much facilitated the excavating powers of old ocean at this place, and the beautiful hollow, without water, except a little which now artificially runs through it under cover, is the result.

Less than two miles further to eastward brings us to the remarkable Kaims upon the Dunse and Oxendean estates. These like the Bedshiel Kaims attain, where highest, an elevation of about 700 feet above the present sea level, some of the higher and more prominent ridges coming up exactly to the 700 feet contour. From this height down to below the 500 feet level, we have a series of very interesting and complicated ridges of sand and gravel, together with rounded and flat mounds and knolls of the same composition—all pointing to one common origin. At about the 700 feet level we also

find that the shutting up of two sounds, one to the west and the other to the north, has taken place. At an elevation of about 700 feet, Mr Milne Home and I, last summer, whilst examining the crags on the N.E. side of Dunse Common (top of Borthwick hill) satisfied ourselves of the existence of a very ancient sea-cliff and beach; the former being composed of the hard basalt of which the hill consists, and the latter of fallen blocks detached from the cliff, and well water-worn on the upper surface and the sides exposed to the action of the great western current, their eastern ends being left quite rough. These blocks appear evidently to have remained undisturbed since they received the last farewell kisses of old ocean. No trace of glaciation could be detected.

In descending the very remarkable ridge of the "Scarting Kaim" we find the generally steep downward slope interrupted by three or four very well marked terraces of considerable extent, evidently indicating long lulls in the process of upheaval of the land. At lower levels we have other deposits of sand and gravel in the form of ridges, knolls, and flat mounds, their materials having been derived partly from the washing down of portions of the older Kaims. Similar deposits occur near Dunse down to 400 feet and even lower; but though presenting many points of interest we can do no more on this occasion than simply allude to them.

To the westward of Bedshiel Kaims very great numbers of gravel ridges and knolls occur at various levels, scattered over a great extent of country. The very striking gravel knoll at Cammerlaws and other Kaims near the Blackadder come up to the 700 feet level; but there are a great number of similar deposits or formations at lower elevations, *e.g.*, adjoining Gordon Moss and near Earlston, extending over a tract of several miles in extent. As a specimen may be taken the Kaim near the railway not far from West Morriston, from which a large quantity of gravel has been taken for ballasting the line. It consists of sand and gravel, the latter being pebbles of greywacke, porphyry, and old red sandstone, all of which may have been derived from rocks now seen *in situ* within a few miles to westward; also many pebbles of quartz apparently of Grampian origin, but none of the particular quartz upon which I to-day submit a separate paper. The sand is irregularly stratified with the gravel. The pebbles are more or less rounded, many of them being of a *bulletty* form, indicating much littoral rolling.

In conclusion, I present this paper as a very rough and

imperfect sketch or contribution towards the elucidation of a subject which is now attracting much interest amongst men of science. For a young and active enthusiast in the matter, I could not imagine a higher pleasure than a whole summer's devotion to the study of the Berwickshire Kaims. With map and level in hand, pure air, simple and wholesome fare, and plenty of good sound physical exertion, he would soon get enamoured of his subject. The scenery around him, would, especially in the lengthening shadows of a fine summer evening, present features, which, besides being in themselves "things of beauty" would possess in his eyes a deeper and more intellectual charm. He would observe with delight the terraces eroded so long ago by the ocean upon what are now hill sides, waving with grain or shewing the green and purple tints of grass and heather—these erosions marking the stages at which the land had rested awhile in the course of its long continued upward progress. He would also notice the effect of the ancient waters in rounding off all surface angularities and in excavating the existing water courses, and would retire imbued with the deep and solemn feeling of grandeur, order, and beauty, which a new insight into any of the physical operations of the great and adorable Creator never fails to produce.

Ancrum, in Roxburghshire.—By ALEXANDER JEFFREY,
F.A.S., Scotland.

ANCRUM occupies a lovely situation on the river Alne. The name has no doubt been conferred by the British people, and is descriptive of its site on one of the *crumbs* or bends of the stream. The course of the river for many miles from where it joins the Teviot, is remarkable for numerous bends or curves. The Church and Town existed at a very early period. In the *Inquisitio Davidis*, in 1116, the church appears as belonging to the Bishop of Glasgow; *Alne crumba Treveronum.*"* The lands were at an early period erected into a regality, which James IV. confirmed in 1490. The territory remained with the Bishops of Glasgow till the Reformation. It is now in the hands of the Duke of Roxburghe. The Bishops of Glasgow had a palace here which in modern times has been popularly called the Malton Walls, mistakingly supposed to have been the property of the Knights of St.

* *Inquisitionis Davidis*, 1116. *Registrum Glas.*, vol. i., p. 7.

John of Jerusalem. The poet of Teviotdale (Leyden) referring to these ruins, sings :—

“ Where Alna bursting from her moorish springs,
O'er many a cliff, her smoking torrent flings ;
And broad from bank to bank the shadows fall
From every Gothic turret's mouldering wall ;
Each ivied spire and sculpture fretted court,
Where plummy templars held their gay resort,
Spread their cross banners in the sun to shine,
And called green Teviot's youth to Palestine.”

But the truth is the Hospitallers had no property in this locality. What was taken for the ruins of the building of the Knights of Malta was the palace of the Bishops of Glasgow. The ruins of the building were to be seen within these few years. A number of the houses of Ancrum have been in part built out of these remains. The foundations of the building may still be traced in a field on the east of Ancrum, and to the north of the public road from the bridge over the Alne to the village.

William de Bondington, one of the Chancellors of Scotland who succeeded to the Bishopric of Glasgow in 1233, and is said to have been a native of the Borders, lived much at Ancrum, where he died in 1258, and was interred in the Abbey of Melros, near the high altar. *Item venerabilis pater noster Willelmus episcopus Glasguensis migravit ex hoc seculo in vigilia Sancti Martini (Nov. 10) et in die Sancti Bricii (Nov. 13) apud Melros juxta magnum altare sepelitur.** At that time Ancrum was celebrated for its beautiful gardens, and it has not yet lost the character it bore in the beginning of the thirteenth century. The House of Ancrum or Palace had a grant of Peatery, *in perpetuum*, from Burnard of Faringdune, out of his two mosses at that place. On the granting of the deed, Burnard swore on the evangils and the relics of the Bishop's Chapel at Ancrum, that he would not challenge the grant or throw any impediment in the way of the servants of the Bishop taking peats in terms of the gift. This deed was subscribed at Ancrum House in presence of the Parson of Ancrum, who was at the time, Dean of Teviotdale ; Adam and Robert, chaplains to the Bishop ; Pauline, chaplain of Faringdune ; William of Avest, seneschal to the Bishop ; Warino, the butler ; Peter, the dispensator ; Robert of Hertford, clerk ; Walter, the treasurer ; Yvone of the chapel. Many of the charters of the bishops of Glasgow are dated at Ancrum. The Chapel of the Bishops adjoined the palace. The burying-ground of the chapel

* Chron. Mail., p. 184.

lay between the building and the river. The plough has now passed over the palace, chapel, and burying-ground. The parish church of Ancrum is situated in a secluded nook of the river a little to the west of Ancrum. It was built in 1762. The old church was formed of wood and broom. In the middle of the village green stands a cross, consisting of a tall shaft of stone, the top of which has been broken off, rendering it difficult to say what kind of a termination it had originally. It is thought to have been surmounted by a unicorn. In the statistical account of the parish, it is said that "one of the most learned architectural antiquaries of the present day, thinks it may be pronounced as old as the reign of Alexander III." There can be little doubt, that the cross owes its erection to the saintly David on obtaining possession of the district south of the Forth at the death of his father. On the bank of the river next to the village, are a number of caves of the same form as those seen at Lintalee on Jed, Roxburgh on Teviot, and on the Cayle at Grahamslaw. A number of the same kind of caves are to be seen on the left bank of the river as it sweeps past the site of the Bishop's Palace. One of these caves close by the manse is popularly known as Thomson's Cave, from the idea that the poet had made it his resort while residing with Mr. Cranstoun, the minister of the parish; but it is believed that the Author of the Seasons was only once in the cave, and while there, became so nervous and frightened that he durst not leave till a chair was obtained with ropes attached, into which he was placed and hauled up the steep bank. The name of "Thomson" carved upon the roof, was cut by a son of Dr. Campbell, a late incumbent of the parish, and not by Thomson himself as is generally supposed. The cave was however, the resort of the Rev. Mr. Cranstoun for prayer and meditation.

Farther down the river, the banks attract the attention of the student of Geology.

On the left bank of the Alne and exactly opposite to the village, stands Ancrum House, formerly Over Ancrum. The lands originally belonged to the Abbey of Jedburgh, and were by the monks let in feu to Robert Ker, third son of the celebrated Dand Ker of Fernieherst, about 1542, and who, on his marriage with Margaret Home of Wedderburn, built a tower which now forms the centre of Sir William Scott's castle. With the Kers the lands remained till the Reformation. In 1610, King James granted them to Alexander,

Earl of Home. The territory about the beginning of the 17th century passed into the family of Scott, who can trace their origin to the beginning of the 12th century. The grounds of the castle contain many fine trees; a lime tree, 27 feet in circumference; a weeping ash, 21 feet; a willow, 14 feet; and two walnut trees about 10 feet in girth. The heights to the west of the house have been occupied by forts. The ruins of one of these forts are still to be seen. Here one of the principal Border garrisons was kept. The locality was often visited by *our enemies the English* during the time of Border warfare. Dacre burned it in 1513. It was destroyed by Sir Ralph Evers in 1544, and was again burned to the ground by Hertford in the following year.

The town of Ancrum gave a surname to several persons between 1252 and 1406. The pious John Livingstone was incumbent of the parish of Ancrum about 1660. Two years after he was banished to Holland, and a person named James Scott, who was under sentence of excommunication, presented to the charge. His settlement was opposed, and a few boys threw some stones, which was magnified to a great offence, and they were carried to Edinburgh, tried and sentenced to be scourged through the streets, burned in the face with a hot iron, and sold as slaves to Barbadoes. A woman of the name of Turnbull, who had taken Scott by the cloak to speak to him, was whipped through the streets of Jedburgh. Two of her brothers were banished to Virginia. John Buchan, Author of "*Domestic Medicine*," was born here in 1729. John Hume, a dramatic writer, was born in the vicinity of Ancrum.

The site of the battle of Ancrum Moor is a little to the east of Ancrum, partly on the territory of Sir William Scott. The battle was fought in 1545. Tradition has it, that the place where the battle was fought was on Lilliard's Edge, a ridge running east and west, and that a young female belonging to Maxton or Broomhouse, fell fighting in the Scottish ranks. It is said that when Evers destroyed her native village, her relations and lover were slain, and she having sworn to revenge their loss, joined the army of the Scots, and performed deeds of valour. The same authority tells us that she was buried where she fell, near to the edge of the Roman Road; and a stone erected to her memory bore the following inscription:—

"Fair maid Lilliard lies under this stane,
Little was her stature, but great was her fame;
On the English louns she laid many thumps,
And when her legs were cutten off, she fought upon her stumps."

A stone bearing the above lines existed before 1743, and was only kept in remembrance by tradition. Within the present century, another stone, now broken to pieces, and bearing the same inscription, was erected on the ridge. I think the Battle of Ancrum Moor was fought on the flat ground a little to the west of the Moss at Baron's Folly, and not as is generally supposed, near the summit of the ridge. It is probable, that the heron which the Douglas saw, arose out of this marsh, and gave rise to the exclamation, "Oh that I had my gay gos-hawk, that we might all have yoked together." The chroniclers say that the battle was fought at the back of *Panniersheugh*, meaning Penielheugh. The English army was in retreat along the Roman way, making for the ford in the Teviot, when the Scottish army fell upon them. It is only fair to say, that victory was not solely owing to the valour of the Border spears led by the Douglas and the Scott; but to the clan Turnbells who had been forced to take assurance under the English and compelled to accompany the army in their inroads into Scotland. When the two armies met on Ancrum Moor, the Turnbells threw away their red crosses of St. George, and turned their swords against the foes of their native land. They took a bloody revenge for the Valley of the Rule being harried by the English a short time previously.

The Hill of Penielheugh is to the east of the Watling Street, and commands a fine view of the valley of the Teviot. The name *Peniel* was imposed by the British people, signifying the head of the rocks, *Pen-i-wal*, to which the Saxons added *heugh*. On the crest of the hill is a monument erected to commemorate the chain of victories, ending with Waterloo, obtained by Wellington over the enemies of his country. The hill is situated in the richest and overlooks the loveliest portion of Teviotdale.

MOUNT TEVIOT, one of the seats of the Marquis of Lothian, stands upon the left bank of the river Teviot. There was formerly a hospital at this place: part of the grave-yard is still to be seen. In 1544, this hospital was burned by Sir Ralph Evers, and by Hertford in the course of the following year. Mr. Morton says that the hospital destroyed by the English leaders was Ancrum Hospital, but I am satisfied he is wrong, as there never was a hospital at Ancrum. The nearness of this hospital to Ancrum had misled the English generals.

The Watling Street on its way north, crossed the river at this place. The station of *Gadanica* was on the south side

of the river. The house of Mr. Jerdan, where the Club breakfasted, stands within the bounds of the Roman town.

Nisbet, where the club are to dine, is the birthplace of the eminent divine, Samuel Rutherford.

Obituary Notice of Dr. Robert Dundas Thomson, F.R.S., &c.
By WILLIAM BAIRD, M.D.

WHEN the Berwickshire Naturalists' Club was founded, the original members numbered nine. The obituary notices in the Proceedings have already recorded the death of four, and we have now the melancholy duty of adding the name of a fifth.

Dr. Robert Dundas Thomson, the member who has recently departed from amongst us, was the second son of the late Rev. James Thomson, D.D., for many years minister of the parish of Eccles, in Berwickshire, and was born in the year 1811.

The old manse of Eccles was a very different building from the commodious and handsome house now standing in its place. Part of it, the kitchen, was covered with thatch, and a spark from the chimney falling upon it one day, set fire to the dry roof. Fanned by a strong breeze, the blaze was soon communicated to the rest of the building, and speedily the old house was reduced to ashes. In this venerable house four of our original members were born; the late Rev. J. Baird, the late Rev. A. Baird, the writer of this notice, and the subject of it, Dr. Thomson.

Robert was destined by his parents for the medical profession, and he soon shewed in addition to his devotion to his medical studies, a great love for the Natural sciences, especially Botany, Mineralogy, and Geology. He commenced his medical education in the University of Edinburgh, but his uncle, the celebrated chemist, Dr. Thomas Thomson, being at that time Professor of Chemistry in the University of Glasgow, he was subsequently transferred to that seat of learning, and under the auspices of his uncle, soon became a proficient chemist. At this ancient college he took his degree of M.D., and soon afterwards entered the East India Company's Maritime Service, as assistant surgeon of the ship "Duchess of Athol." He had only made one voyage to India and China, when the Charter of the East India Company as a trading body, was withdrawn from them, and the

noble fleet of vessels known as the East India Company's Maritime Service, was at an end. Upon his quitting the service, he established himself in practice in Gower Street, London, where he continued for eight years. While there, he was instrumental in founding and establishing the Blenheim Street Free Dispensary, an institution which has conferred great benefits upon the poor of that crowded neighbourhood, and for several years he acted gratuitously as one of its physicians. In connection with the Blenheim Street School of Medicine he also gave a course of lectures on Chemistry, which was well attended. His leisure time he devoted to conducting a monthly periodical entitled "Records of General Science;" and in conjunction with Dr. W. Farr, now statician of the Registrar General's Office, he edited the "Annals of Medicine."

Upon his marriage to his cousin, the daughter of Professor Thomas Thomson, he removed from London to Glasgow, and for 10 years assisted his uncle, who was now becoming enfeebled by age, in the active duties of the Professor's chair. In the lectures he there delivered in connection with this branch of education, he gave such satisfaction, that at the death of the aged Professor, he was generally expected to succeed him in the chair of chemistry. His politics, however, were distasteful to the government of the day, and he was doomed to disappointment in the object of his ambition.

He soon after returned to London, and was appointed Professor of Chemistry to the Medical School of St. Thomas's Hospital. In 1856, on the "Metropolis Management Act" coming into operation, which empowered the vestries of the different parishes to choose medical officers of health for their respective districts, he was elected by the Vestry of Marylebone to that office, in that large and influential parish. This responsible appointment he continued to hold till his death, performing the duties of it with great satisfaction to the public.

Dr. Thomson was connected with many scientific societies. He was a Fellow of the Royal Societies of London and Edinburgh, a Member of the Royal College of Physicians, Examiner in Chemistry on the Council of the University of London, and President of the British Meteorological Society. He was also one of the physicians to the Scottish Hospital, and to it his services were always most heartily rendered.

Dr. Thomson was well known for the great attention he paid to the analysis of the drinking waters supplied to the

public by the various water companies of London, Liverpool, and other provincial cities. For many years he furnished gratuitously, at short intervals, a report to the Registrar General upon the state and quality of the water supplied to the public of the metropolis.

Many scientific papers and separate works given to the world at various times, prove the activity of Dr. Thomson's mind. In addition to those mentioned above, he edited for three years, the "British Annual"; published a work on "Food for Cattle," a "School Chemistry," and a more elaborate work, the "Cyclopædia of Chemistry." He ever delighted in the progress and well being of the Berwickshire Naturalists' Club, was a contributor of several papers to the earlier numbers of the Proceedings, and took to the last a warm interest in its welfare. He was of a genial disposition, and warm in his friendships, and as the author of a short memoir of him in the *Gentleman's Magazine* justly remarks:—"The enlightened and liberal view taken by Dr. Thomson in new discoveries, and generally in scientific subjects, the energy of his character, and his kindly disposition manifested on many occasions to all with whom he was brought into contact, endeared him to a numerous circle of friends."

Dr. Thomson about two years ago made a rather hurried visit to Spain, during which he suffered a good deal from fatigue and indifferent diet. From this, he has frequently stated, he never recovered, though the immediate cause of death was a malignant tumour in the abdomen, preventing him taking nourishment. In consequence of this, he gradually sunk from exhaustion, and died on the 17th August, 1864, at the comparatively early age of 53.

Notes for 1864. By JAMES HARDY.

1. *Ophioglossum vulgatum*. This summer I have observed a new locality for this fern, so rare in Berwickshire; although abundant in South Northumberland and in the county of Durham, in old pasture fields. It grows on the sea-banks near St. Helen's Church; but I could find no more than three plants. What is remarkable about this station, is that it has been ploughed perhaps thirty years ago, or thereabouts, and it is while the herbage is recovering its original condition, that the fern has sprung up. The *Ophio-*

glossum grows here in strong clayey soil, as have been the other localities where it has occurred.

2. *Cuscuta Trifolii*. Sometimes abundant among tares grown from continental seed. I see a considerable quantity of it in a field of young clover at Oldcambus.

3. *Aphis Rapæ*. Worthy of record from year to year, are the ravages of destructive insects, and the districts liable to their attacks. During the present season, while the turnip has been suffering from the parching influence of the great drought, it has also miserably been kept behind by the abundance of the common green fly (*Aphis Rapæ*). The immediate neighbourhood of Wooler, diminishing to the north and south of that place; the district around Dunstanborough Castle; Tyneside; and parts of the county of Durham, have been particularly infested with it; while in the east of Berwickshire I have not seen it at all. The oat crop for a time, however, was loaded with *Aphis Avenæ*, but without inflicting any injury that I could perceive.

4. *Coccus Fagi*. This appears to be spreading. As a native of Berwickshire, I observed it two years since on the trunk of a beech near the Railway Station at Ayton. I believe I was the first to notice this insect in the *Journal of Horticulture*, conducted by Mr. Charles Macintosh, in connection with the *North British Agriculturist*. He forwarded specimens from Dalkeith Park, in the young and egg state, which I ventured to say was a *Coccus*. Communicating with Mr. F. Walker, I found that he had obtained the perfect insect near London; and he has named it *Coccus Fagi*, in the British Museum Catalogue of Homoptera. Since first noticing it, Professor Balfour has sent me specimens from the Edinburgh Botanic Gardens. It occupies the trunk of the trees attacked, like a dirty cottony mould.

5. It is surprising how deep the *Aphis* of the sow-thistle root, (*Rhizoterus Vacca*,) will penetrate, even into the stiffest clayey soil; and how it maintains its place amidst repeated cultivation. As far down as the plough can reach, the roots come torn up attended by generations of the insect; whose white cottony excretion scattered through the soil, is quite apparent as one crosses over the recent furrows.

6. *Coccus halophilus*, J. H. The *Cocci* offer few tangible specific characters. The present species apart from its peculiar habits cannot be readily discriminated by words. It is scarcely a quarter of a line long, oval, opaque white, without a hard scale, abundantly supplied with a white excretion.

Found on the steep sea-banks near Fastcastle among the roots of *Ligusticum Scoticum*, and *Rhodiola rosea*; and afterwards on the roots of *Statice Armeria* in the greywacke cliffs near Siccar Point. In both cases it follows the long fibrils minutely interwoven through the loose slaty *débris*.

The Ancient British Sculptured Rocks of Northumberland and the Eastern Borders, with Notices of the Remains associated with these Sculptures. By GEORGE TATE, F.G.S., &c.

I.—HISTORICAL AND INTRODUCTORY.

NEARLY forty years ago, Mr. J. C. Langlands observed some worn and defaced figures incised on a rude sandstone block, near to the great camp on Old Bewick Hill in North Northumberland. Though strange and old-world looking, these figures then presented an isolated fact, and he hesitated to connect them with by-past ages; for they might have been the recent work of an ingenious shepherd, while resting on the hill; but on finding, some years afterwards, another incised stone of a similar character on the same hill, he then formed the opinion, that these sculptures were very ancient, and probably the work of the same people who erected the strong and complicated fort cresting the hill. To him belongs the honour of the first discovery of these archaic sculptures; but his discovery assumed greater importance and significance, when, in 1852, the Rev. William Greenwell found another stone with similar figures near Routing Linn, which is distant twelve miles to the north-west of Old Bewick. In the course of the summer of that year, while engaged in the investigation of ancient British sepulchral remains, I visited this stone along with Mr. Greenwell; and on that occasion we pulled off a covering of turf nine inches in depth, from the lower part of it, and exposed several figures, which then appeared sharp and distinct, having for centuries been protected from the elements. Mr. Greenwell, in July 1852, read a paper on these sculptures before the meeting of the Archaeological Institute held at Newcastle; and, though two ponderous volumes professing to be a record of its proceedings have been printed, strange is it, that this paper, the most novel communication made to the meeting, found no

place in this publication. After again visiting these rocks, I submitted sketches of them to a meeting of the Berwickshire Naturalists' Club, on the 13th October, 1862; "which issued in a determination to see these singular and mysterious inscriptions on the spots where they yet remain."* This led Dr. Johnston, then secretary of the club, to notice the subject and to give a drawing of the Routing Linn Stone in his "Natural History of the Eastern Borders," published in 1853,† in connection with his account of the *Osmunda regalis*, which grew above the Linn. In October of the same year, when president of the Berwickshire Naturalists' Club, I gave in my address, a description of the principal figures on the Routing Linn and Old Bewick Stones, with some general views of their age and meaning—views then put forth for the first time, and which, though not accordant with opinions then current, have since been pretty generally adopted. Some time subsequently, I submitted sketches of these inscribed stones to the Society of Antiquaries in Scotland; and occasional notices have since appeared in the proceedings of this club regarding the discovery of these inscriptions.‡ Some of these notices were reproduced in the Metropolitan Journals. The action of this club has stimulated inquiry and research both in Northumberland and other parts of the kingdom; though perhaps the investigation has been more fully carried out in Northumberland than elsewhere; for during the last twelve years, several members of this club and their friends have been quietly, yet successfully exploring the district; the Rev. William Procter and his family (especially Mr. William Procter, jun.), Mr. William Wightman, and Mr. Charles Rea, and others, have made several additional discoveries.

As these inscribed stones are within the district this club professes to explore, and as they have been visited and examined by its members, it has been felt as a duty devolving on it, to give in its Proceedings a full account of the observations which have been made, with ample illustrations of the sculptures themselves. Need I apologise for undertaking this duty? for at a meeting of the club held at Beadnell, on 27th May, 1858, it was "proposed by Mr. Dickson and unanimously carried, that Mr. Tate be requested to

* History of the Berwickshire Naturalists' Club, vol. iii., p. 127.

† Johnston's Natural History of the Eastern Borders, vol. i., p. 256.

‡ History of the Berwickshire Naturalists' Club, vol. iv., p. 233; Ibid, p. 337.

prepare a paper to be accompanied by careful drawings and explanations of the concentric circles on Routin Linn, Bewick, and other places, in conjunction with other sculptured stones in other parts of the district." Reference is also made to this subject in a paper read by Mr. Dickson in 1858, on a Saxon Cross at Rothbury; "here on the Borders we have the mysterious concentric circles carved on the rocks of Doddington and elsewhere, emblems of eternity. But as Mr. Tate, one of our members, has promised a paper on the subject I forbear to add more."* With a view to the accomplishment of this task, I have year after year examined and sketched all the stones which have been discovered in the Border land, noted the antiquities with which they are connected, and ranged over wide districts where they were likely to be found. Circumstances have delayed the publication of this paper, partly arising from difficulties in obtaining satisfactory drawings, and partly from the hope, that in accordance with a recommendation I had submitted, diggings would have been made with the view of throwing light on these sculptures. Some advantage has resulted from the delay; new facts have accumulated; and the researches recently made in the district by excavations into ancient British oppida, forts, and sepulchres, the results of which have been printed in the Club's Proceedings, help to throw light on the period to which these inscribed blocks belong.†

The drawings which illustrate this paper, include every inscribed rock in Northumberland found *in situ*, on which intelligible forms could be traced. With the exception of the Routing Linn Stone, all are drawn to a scale of half-an-inch to the foot—a size which adequately represents every essential character, and conveniently admits of the comparison of the various figures with each other. Plans of the figures are given, because shewing their true forms better than perspective views. To produce a pretty picture out of rugged rocks and rude sculptures has not been attempted; indeed natural breaks and markings on the rock have been excluded, where they would interfere with a proper perception of the artificial forms incised. Most of the drawings have been made from the stones by Mr. John Storey, an able and distinguished artist, under my own direction, and aided by tracings and rubbings; others are from rubbings kindly

* History of the Berwickshire Naturalists' Club, vol. iv., p. 72.

† History of the Berwickshire Naturalists' Club, vol. iv., pp. 293, 436.

furnished by Mr. William Procter, jun.; for other artistic help, I am indebted to Mr. F. R. Wilson and Mr. J. C. Langlands. Here, therefore, the geologist, the antiquary, and the artist have united to produce, as far as practicable, correct representations of the forms of these time-worn sculptures.*

In my notice of the several stones, I shall follow the course adopted by honest naturalists, in attributing every discovery to its proper source. Those who follow in the wake of original observers, know little of the labour endured in the discovery of even apparently trifling facts. Oftentimes, as I have experienced, days may be spent in wild exposed moors and hills, with no gain save negative results. The discoverer, therefore, of an inscribed stone or of any other antiquarian object, is as much entitled to honourable notice, as the discoverer of a plant or animal.

I wish it to be distinctly understood, that in this paper I shall deal more with facts than fancies; and as I shall give an account, not only of the inscribed stones themselves, but also of the ancient remains with which they are associated, I believe, that a collection of authenticated observations will have their value, even though we may not arrive at a full and satisfactory explanation of the meaning of the symbolical figures; for such an extensive survey of the subject will of itself dissipate some of the crude notions which have been formed as to the meaning of the figures, and which have been founded on a limited knowledge of the facts bearing on the question.

II.—CHARACTERISTIC FIGURES.

Before noticing each particular stone, it will be useful to describe some of the characteristic figures, to point out the peculiar nature of the sculpturing, and to shew their distribution in the Border land.

The most typical figure is composed of a series of circles around a central hollow or cup, from which proceeds a gutter or radial groove through the series of circles—*Fig. 1.*, p. 141. In most cases the circles are incomplete or stop short of the radial groove; but in others, they are complete and join the

* I have great pleasure in acknowledging the assistance kindly afforded to me in these Northumberland researches by Mr. J. C. Langlands of Old Bewick, the Rev. William Procter, A.M., of Doddington, Mr. Charles Rea of Doddington, Mr. William Henderson of Fowberry Mains; and most especially am I obligated to Mr. William Procter, jun., for aiding me in my re-examination of the district around Doddington, which he has successfully explored.

radial groove; the distinction, however, is immaterial. This form distinguishes these sculptures from all others. Sometimes there is only one circle; frequently there are three or four; and in one case, there are eight. The size varies from two inches up to thirty-nine inches in diameter. Some forms are true circles, as if drawn by the help of an instrument; most however, had been drawn without such aid, for they are irregular in outline—some bulged out in breadth, in the proportion of 13 and 14 to 12, others lengthened and pear-shaped. Usually the groove is straight, but sometimes it is curved and wavy, and oftentimes extended beyond the outer circle. The groove is very generally down the slope of the rock, but occasionally it is across the slope.



Another highly typical figure consists of incomplete concentric circles around a central hollow, but having no groove—*Fig. 2*. The passage out of figure 1, is as it were, by a hollow way; but out of this by a causeway.

These incomplete circles sometimes end in hollows.



The groove passing through the concentric circles, sometimes is diametric—*Fig. 11*; but this is not frequent, and occurs chiefly in compound figures.

A circle or circles around a cup, but with the groove extended from the circumference of the outer circle—*Fig. 5*.

Incomplete concentric circles around a cup, and with two parallel grooves from the ends of the inner circle—*Fig. 6*.

Another figure similar to this, has one groove from the

central cup and another parallel to it from the outer circle.

Concentric arches over a cup, from which there is a straight groove—*Fig. 7.*

Horse-shoe figure around a cup—*Fig. 13.*

A figure of the common type, but with the addition of nine grooves radiating from the outer circle and directed southward—*Fig. 4.*

Some figures inclose more than one cup; two examples of this are here given, along with forms considerably different from the common type.

An oblong figure rounded at the corners and contracted at the base, with twelve cups and a groove from the centre; it is difficult to give an intelligible description of it, and reference must be made to *Fig. 12.*

Three concentric squares rounded at the corners, having within them many cups and a radial groove—*Fig. 8*; both these forms we could imagine to be circles squeezed out of their normal state.

Less characteristic forms are :—

Concentric ovals—*Fig. 9.*

A circle.

A circle or series of concentric circles around a central hollow—*Fig. 15.*



15

Round hollows or cups occur scattered over stones without being enclosed by circles or other figures.

Various forms are often combined with each other, presenting complicated, strange maze-like figures, which will be best understood by reference to the plates. Two of the simpler combinations may be noticed here.

Circles and groups of circles united by a groove passing from centre to centre—*Fig. 3.*

Three detached circles, each around a cup, are united by grooves, so as to give a rude resemblance to a plant with its stem, its branches, and flowers—*Fig. 10.*

With a few exceptions, these sculptures are marked by a family character, which is readily recognisable by experienced observers; yet though fifty-five different inscribed stones have been discovered in Northumberland, no two of them are alike. Even where abnormal forms appear, we are enabled, by their association with figures of the common type, to include them in the family group.

III.—CHARACTER OF THE SCULPTURING.

All the figures are incised on sandstone; some incisions

are but little below the surface, others are as much as half an inch in depth; usually however, the depth is about one quarter of an inch. The hollows are deeper, some being fully one and a half inch. The original character of the sculpturing, is best seen on stones recently cleared of a covering of peat, which has to a considerable degree preserved the figures from being worn and altered. These appear to have been rudely executed; the circles, grooves, and hollows, have been chipped out by pointed tools, some of which had been blunter and a little broader than others; the tool marks are in such cases distinctly visible, and the edges of the sculpturings are rough and jagged. Long exposure to weather, has however, altered the appearance of other figures; it has smoothed the grooves and rounded the edges of the spaces between the grooves, so that these spaces now stand out like rings; but this more finished aspect is due, not to art, but to nature; for the play of the elements during many centuries, has smoothed and rounded the rude workmanship of the primæval artists. This effect is shewn in *Plate X., fig. 6.* The rock has not been prepared in any way for these sculpturings; it is in its natural state, ridged and hollowed and rugged, as nature had made it; and the figures are incised on this irregular, broken surface, as well as on the smoother parts of the rock. The roughness and unevenness of the surface of these figured rocks, might indeed be twisted into an argument in favour of the sculpturings having been made with a stone tool. However this may be, the material of which the tool was made is not determinable by the sculpturings themselves; that must be decided by other evidence.

The number of figures on each stone is very different; on some there is only one, but on the great stone at Routing Linn, sixty figures are still traceable.

IV.—DISTRIBUTION OF THE INSCRIBED ROCKS IN NORTHUMBERLAND.

The distribution of these inscribed rocks in Northumberland, is interesting. To correct misapprehension, I may state, that they do not appear either on the Cheviots or on their flanks. I have repeatedly searched these hills, and especially their flanks for such inscribed stones; but I could never detect the least trace of a sculpture. This negative result might furnish another argument in favour of the notion, that these sculptures were made before metallic tools

were in use ; for on the flanks of the Cheviots, and even on the summits of the minor hills, there are numbers of forts, dwellings, and sepulchres, of the same character and age, as those associated with the inscribed stones ; and it might therefore be inferred, that no sculptures are to be found on the porphyry of the Cheviots, because the rock was intractable under stone tools.

These inscribed rocks occur on one or other of the beds of thick sandstone, which is near the base of the mountain limestone formation, and which forms the sub-stratum of the high moor-lands of Northumberland, rising up in some cases to the height of 1400 feet above the sea level. On the rough surface of the rock, where it crops out in different platforms on these hills, we find these sculptures. In the north-west part of the district, they occur on the upper surface of the cliffs near Routing Linn, about six miles northward of Wooler—they are scattered in great profusion on the ridges in the moor-land at Harelaw, Horton, and Doddington, and on Gled law—they are on the outbreak of rock at Cuddy's Cove—they are found on the summit of Whitsunbank, Chatton Law, and Old Bewick Hill ; they have been found in the Beanley and North Charlton Moors ; they existed in Cartington Cove near Rothbury ; and they have been discovered, but not *in situ*, in the parish of Stamfordham. Very probably, they will hereafter be found in the continuation of this range of sandstone into the Redesdale and Tynedale Moors. When found *in situ*, they are always in high grounds—generally on lofty hills, some of which are nearly 800 feet above the sea level.

V.—DESCRIPTION OF THE DIFFERENT INSCRIBED ROCKS.

Turning now to the individual rocks in Northumberland, I shall follow their geographical range, and as we pass along, notice the ancient remains with which they are associated.

Routing Linn, Hunter's Moor, and Ford West Field.

Routing Linn.—The great stone at Routing Linn, though not the first discovered, may be first described, as it is nearly the most northerly in situation, and contains the largest number and greatest variety of figures. It is situated on the edge of wild dreary moor-lands, about midway between Doddington and Ford, by the side of a burn, which tumbles over a sandstone cliff some 30 feet in height, into the *Linn* (Celtic) or pool at its base. The meaning of the name is

pretty well ascertained—*Routing* (from *rout-a*, Isl.) means to bellow; and is applied both in Northumberland and in Scotland to the bellowing of cattle. When the burn is swollen with the rainfall from the hills, it becomes a torrent; and falling over the cliff into the *Linn*, with a loud noise like the routing or bellowing of cattle, it is called the Routing Linn.

This rock (*Plate I.*, drawn on the scale of one fourth of an inch to the foot,) is the largest of all the inscribed stones discovered; and yet it is but a fragment, for part of it has been quarried away on the south side; it is *in situ*, rising 10 feet above the ground on the south side, with a short abrupt slope to the south, and a larger slope towards the north and west; it is 60 feet in length from east to west, and 40 feet in its broadest part. Rising so much above the ground, it is more ridged and irregular in its surface than most other rocks. Untrimmed by art, it is rough as nature has left it, and yet over all parts—over ridges and hollows, as well as over smoother places, the mysterious figures have been incised. How many figures may have been on this rock originally, it is impossible to say; now, fifty-five are traceable on its northern and western slopes, and five more on its weather-worn and deeply guttered southern aspect.* Doubtless, the whole stone had been covered with inscriptions, and originally there would not be less than one hundred figures.

Most of the figures are typical forms. One of them has a hook-like process at the side; here is an arched figure like a recessed Gothic doorway; here are concentric circles with two and three grooves issuing from them; here are horse-shoe forms, and here is the singular figure with nine radiating grooves from the top of the outer circle. This appendage was first noticed in 1855, when Mr. John Stuart, Secretary of Antiquaries of Scotland, and myself, visited this stone. One outer ray is directed south 20° east, the other south 15° west, and the middle ray south by east. Some of the compound figures are peculiar; there is the plant-like form, with its stem, branches, and floral heads; there are two circles a little apart, united by a groove passing from centre to centre, reminding one of the curious and unexplained spectacle ornament on the Scottish sculptured stones; and there are other two circles with long tails uniting and ending in cups, and which perchance, might conventionally represent comets.

* The five weather-worn figures on the southern aspect are common forms, and are not shewn on the plate.

The figures on this stone have a more artistic appearance than most others, which is partly due to the care with which they have been formed, and partly to the moulding action of the elements; the incised circles and grooves are deep, usually from one-fourth to three-eighths of an inch; some are even half-an-inch; the hollows or cups are deeper still, some being as deep as one inch and a half. In size, the figures range from three inches to two feet nine inches in diameter; the common size is fifteen inches. Twelve years ago, the lower part of the stone was concealed by a covering of peat nine inches in depth.

This marvellous rock is within an ancient British camp, which occupies an angle formed by the bend of the Routing Linn Burn, and is defended on the north and west sides partly by deep gullies, and on the other by four strong rampiers and ditches. Like some other camps of the same age, it has attached to it a large area enclosed by a supplemental rampier; and it is within this area, about midway between the camp and the external rampier, that the inscribed rock stands. To the northward about 100 yards is a barrow, under which were interred the remains of some ancient Briton, to whom the mysterious inscriptions had a definite meaning.

Hunter's Moor.—North-westward, nearly a mile from Routing Linn, on a high ridge on Hunter's Moor, a large surface of rock, some forty yards by twenty, having a gentle slope to the northward, is partially uncovered. In one part, which has been entirely cleared of turf, fourteen figures are scattered over an area of 15 feet by about from 5 to 7 feet—(*Plate II., figs. 1, 2.*) Some of the figures are of the common type, one of which is 28 inches in diameter; but others present new features; and several are curiously united by straight and curved grooves. Across the entire diameter of a group of four concentric circles, runs a groove connecting them with other combined figures. An irregularly shaped, rounded, angular figure, encloses two hollows or cups; and united to this is a broad oval figure. One figure around four cups approaches to the reniform. This stone derives additional interest, because similar to a stone at Stonehaven, figured in the *Sculptured Stones of Scotland*. On that stone there is none of our typical figures, but there are circles with cups, and combinations of figures, which resemble those on the Hunter's Moor Rock; and therefore leading to the conclusion, that it too, belongs to the same family and age.

To the westward of this rock about 100 yards, another large area is covered with defaced inscriptions; eleven figures are traceable—all of typical forms—one group of concentric circles being 30 inches in diameter.

Not far from these rocks are several barrows in the moorlands—the burial places of the ancient British people. Two of them were opened by the Rev. William Greenwell; one, which was enclosed by a circle of stones set on edge, contained within a cist-vaen, the fragment of a child's skull and an empty urn; and outside of the cist, were the remains of six or seven bodies all burnt and enclosed in urns, and among the bones were a rude arrow head, a flint flake, and a bone pin, all of which had been subjected to fire. The other barrow contained burnt bones.*

Ford West Field.—More important however, was the discovery by Mr. Greenwell of a typical figure, of three incomplete concentric circles around a cup, on the under surface of a cist cover at Ford West Field, which is about a mile westward of Routing Linn—*Plate XI., fig. 5.* Another cist cover in the same locality, was sculptured with several hollows or cups. Interesting these cases are, because connecting the sculptures with the dead.

Doddington and Horton Moors.

On the Doddington and Horton Moors the inscribed stones are numerous; within an area of two miles from north to south and about a mile in breadth, no less than twenty-five of these stones have been discovered;† this number would be puzzling, were it not that other pre-historic remains are scattered over these high moors in similar profusion.

High Chesters.—About two miles south-eastward of Routing Linn and half-a-mile northward of Doddington, Miss Procter discovered in 1859, one of the most remarkable of the inscribed stones, in a cultivated field called the High Chesters. It was then covered with turf of the depth, in some places, of twelve inches; and this covering had so well preserved the figures, that on being exposed they were remarkably distinct, and probably in a state but little altered since they had come from the hand of the sculptor; so that the character of primæval work is well shewn on this rock.

* History of the Berwickshire Naturalists' Club, vol. iv., p. 390.

† To prevent repetition, I may here state, that nearly all the inscriptions in the Doddington district, have been discovered by the Rev. William Procter and members of his family.

It juts out from the hill side—an irregular mass—ridged and broken on the surface, sloping more or less in all directions, but chiefly towards the west; the whole surface, which is 9 feet long by 7 feet broad, is crowded with figures, chiefly of the ordinary type of concentric circles, some of which are grouped into compound figures by grooves. Here there are oval, horse-shoe, and pear-shaped figures. One form is very peculiar; a circle around a cup, and with two hook-like grooves from one side of the circle—*Plate III., fig. 4.*

Very rude are both the shape and workmanship of the figures; many of the incisions are shallow, still retaining distinct marks of the blunt tools by which the rock had, with little skill, been chipped away. Some of the hollows are however, wide and deep. Thirty figures are traceable on this stone.

Harelaw.—Less than a mile to the north-west, is a range of low rocks cropping out in the moors, called Harelaw Crags, and extending nearly half-a-mile from south-east to north-west. At intervals along this range, Mr. Charles Rea of Doddington, discovered several inscriptions which had been covered over with turf. There are five groups of these inscriptions, and thirteen figures are traceable; all are of the common types; but one is somewhat angular in the lower part of the circles. These sculptures are nearly a mile northward from the Ringses Camp. Three groups are figured in *Plate IV., figs. 1, 3, and 4.*

Horton.—Southward of Harelaw Crag about a mile, there is a similar outbreak of rock, ranging from S.S.E. to N.N.W. on the Horton grounds, on which are several inscriptions, which also had been concealed by a covering of turf—*Plate IV., figs. 5, 6, 7, and Plate XI., fig. 4.* Some of the figures present new features; one form of four concentric circles has six cups within the inner circle, and two parallel curving grooves issue from the second circle—*Plate XI., fig. 4.*

The stone, of which two views are given, one on *Plate IV., fig. 5*, and the other on *Plate XI., fig. 1*, presents a new character; the former is a plan of the sculptures seen on the upper surface of the stone; the latter is a perspective view, shewing, on its eastern face, which is $2\frac{1}{2}$ feet in height, a row of round hollows running up the stone, the largest of which is 2 inches in diameter and 1 inch in depth. Such rows occur elsewhere, and will be again referred to.

There are here five groups of inccriptions, and in all sixteen figures; the locality is less than quarter of a mile eastward

of the Ringses * Camp, which possesses characters distinctly referring it to the ancient British people. It is of a circular shape, on high ground, commanding an extensive view; the position, strong by nature, with steep escarpments on the west and south, is defended by three great rampiers formed of earth and stone. Within it are hut circles and larger enclosures, similar to those examined in the Vale of the Breamish; and on the north side, is an additional semicircular rampier enclosing a large area—a peculiar arrangement marking strongholds of the ancient British people; two such areas, but of smaller size, appear on the east and west ends of the Great Fort on Yevering Bell. A stone hammer about a foot long, has recently been found by Mr. William Procter, jun., near to the camp at the foot of the hill.

Dod Law.—The incised rocks on Dod Law appear partly on the summit and partly on lower outbreaks of rock in the escarpment of the hill.

Within six yards to the northward of the principal camp there, one curious figure appears on the surface of the outcropping rock which slopes eastward—*Plate III., fig. 3.* It consists of three concentric circles around a cup; but the outer circle on one side curves outward, and from the second circle there comes a groove, from which another groove branches off at an angle.

Only thirty yards eastward of the same camp, is a very peculiar inscribed stone, because containing forms differing considerably from the common type. It was almost entirely covered over with turf till 1855, when it was observed by Mrs. Procter, who caused part of it to be cleared; another portion was cleared in the course of this present year, and now an area of 16 feet by 8 feet is exposed, covered with figures. The overlying peat which has preserved these singular sculptures, was from a few inches to one foot in depth—*Plate VI., fig. 1.* The abnormal figures are rude irregular squares; one of them with three incomplete concentric squares around fourteen hollows, from one of which proceeds a groove to another cup, and then away through an opening in the squares to the extremity of the stone. Another single quadrangular figure encloses eight cups, and has a groove passing through, but forked at its commencement and starting from two different cups. An

* This name, which I find applied to several round camps in Northumberland, Berwickshire, and Roxburghshire, is simply descriptive of their ring-like rounded form. More learned derivations have been given.

analogous figure approaches to a heart shape. Imaginative speculators, might in these figures find countenance to the notion of the inscriptions being plans of camps; for here we could fancy there were camps with one and three rampiers—a gateway through them—hut dwellings scattered over the area enclosed, and a hollow way leading out of the camp. The shape however, of the imaginary camp does not correspond with those of the period. So different are these figures from other inscriptions, that they might have been referred to a different age and people; but their association with other figures of the normal types, shews their common origin. Three other groups of figures, curved and of irregular forms, are on the scalp of the same rock, but at some distance from each other—*Plate VI., figs. 2, 3, 4.* Twenty-four figures are traceable on these stones.

To the northward of the camp less than half-a-mile, and less than that distance eastward of Doddington, inscriptions appear on a grey gritty sandstone cropping out midway up the hill. On this rock two figures of the common type are traceable—*Plate III., fig 1.*

Several inscriptions, but much obliterated, were found by Mr. Charles Rea, scattered over the surface of another rock about 200 yards further eastward. These however, are not figured.

High up on the crest of the hill, thirteen figures chiefly of typical forms are traceable on another rock. Some are united by a wavy groove—*Plate III., fig. 2.*

On the same high moor-land, about a quarter of a mile east of the Dod Law Camp, there are two groups of large circles, one 21 inches, and the other 2 feet 5 inches in diameter—*Plate IV., fig. 2.* The largest group has three incomplete concentric circles a central cup, a radial groove, and another short groove from one side of the outer circle; from the top of the outer circle, another short groove leads to a large round hollow. A considerable surface of rock, which is tolerably flat but with a gentle eastern slope, is laid bare, and there are traces of other figures.

Gled Law.—On Gled Law, a platform of rock breaking out of the south-west escarpment of Dod Law, and ranging from north-west to south-east, seven groups of inscriptions have recently been discovered. In this assemblage of sculptures, there are traceable thirty-six figures, mostly typical forms; yet in some cases, so varied and combined, as to present new figures. *Plate V.* represents these inscriptions.

In *fig. 2* there is a peculiar group of four single circles around cups, connected by grooves. *Fig. 3* presents a pear-shape figure around a cup, and a serpentine groove winding into another circle. *Fig. 7* shews two curved grooves, out of two concentric circles, crossing each other. *Fig. 1* has a compound form, resembling the spectacle ornament of the Scottish symbols, with a groove from one of the outer circles branching into three hollows or cups; another form has a groove passing through the entire diameter of three concentric circles.

The most remarkable group is in *fig. 4*, where there are two series of large concentric circles attached to each other; one, consisting of six circles, is 26 inches in diameter; the other, the largest figure discovered, is 39 inches in diameter, and has eight complete concentric circles and part of another. In this large figure there are the central cup and *three* radial grooves, none of which, however, extends to the centre, but two of them start from the circumference of the innermost circle, and the other from the second circle. There is no other example of three radial grooves. This interesting discovery was made by Mrs. Procter. The whole of these sculptures are rudely formed, the incisions are shallow, and the tool marks distinct; the circles are irregular and had evidently been drawn without instrumental aid.

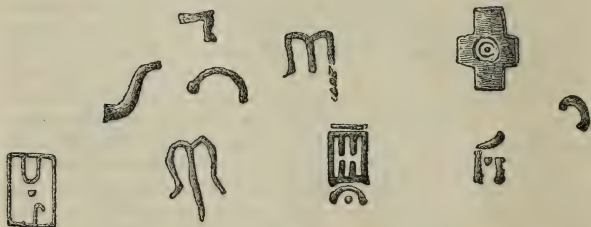
About fifty yards from these sculptures, Mr. Procter has recently discovered the fragments of a sepulchral urn of the ordinary ancient British type.

Cuddy's Cove.—Lower down the escarpment of Dod Law, amass of red sandstone 20 feet in height, projects from the steep hill side; in this is a small cavern called "Cuddy's Cove," it may be from some traditionary connection with the wanderings of Cuthbert the popular Northumbrian Saint. On the scalp of the rock where it dips into the hill, four figures are traceable; but from being very much defaced, it is difficult to make out these forms, even when viewed under a favourable light. These worn sculptures shewn on the annexed figure are of interest, on account of other inscriptions on another part of the rock.



On the perpendicular western face of this rock, several

strange inscriptions different in form from the typical figures were first discovered by myself in 1854; among them appear a cross, and a form like a mediæval letter M. These figures will be better understood by reference to the following drawings:—



I believe them to be archaic, but it may be doubted whether they are of the same age as the figures on the top of the rock. To these I shall again refer.

On the same escarpment, near to the boundary between the Doddington and Weetwood ground, a considerable extent of red coarse gritty sandstone is exposed. Four figures are traceable, and there are remains of other worn-away forms.



To this group some additional interest is attached, because close to them on the east, stood a barrow of piled up stones and earth, beneath which was a cist-vaen containing an urn, ornamented with the characteristic zigzag scorings of the ancient British sepulchral vessels.

The Harelaw, Horton, and Doddington Stones may be all regarded as belonging to one primæval district; and it is important to notice, how they are near to, and surrounded by numerous other remains of the ancient British people; who had doubtless in great numbers occupied the wide elevated summit of the ridge, as well as the more sheltered slopes. There are remains of five camps, or rather fortified oppida, within this district. The great camp on Dod Law presents the same characters as those of the Ringses; it is on the crest

of the hill, defended by two rampiers and ditches; the form is rounded and somewhat pear-shaped, and there is the peculiar supplemental area on the north-west side; within it are several hut circles and larger enclosures of the same description as appear in other ancient British oppida.* We have here too, another feature. At the distance of only 120 yards to the east, there is another large camp, somewhat semicircular, on higher ground, defended by a single rampier; probably both had been connected, as there are traces of a rampier which would have joined the two camps together. To this we have a parallel, in the wonderful ancient British oppidum at Greaves Ash on the Breamish. The two other camps are on the Horton grounds. Near to one of them are the remains of a stone circle, which during the last century would have been called a Druid's temple. Five stones are remaining, two only standing in their original position; when complete the circle had been about 100 feet in circumference; and it probably marks the burying place of some chieftain. At no great distance from it, are several barrows which also appear to have been places of sepulture. Mr. Greenwell dug into some of them, but nothing was discovered save traces of burning. Probably however, these graves had at a former period been rifled of their contents; this was likely to occur when Doddington Moors were held by small proprietors, of whom there were thirty and more who were called "lairds"; and who besides possessing their cultivated lands, enjoyed the right of common over those wide moors. The hope of finding treasure would lead to the opening of the tumuli and circles.

Whitsunbank.

Following the range of hills southward for a mile and a half, we find on Whitsunbank, a lofty hill commanding an extensive view over the district, eight different inscribed stones, all of which were discovered by my friend Mr. William Wightman and myself. They occur in situations similar to those on Dod Law, on the scalp of the sandstone rock on the summit of the hill, or on outbreaks of the same rock on its slope. Thirty-two figures are traceable on these rocks.

On the summit of the hill on a tolerable smooth surface of rock, which has a gentle slope to the north, there are seven

* It is desirable that this camp should be explored by excavations.

figures, all typical—*Plate VII., fig. 3.* The largest figure of six circles is bulged out in breadth; from east to west it is 24 inches in diameter, but only 21 inches from north to south; it is connected by a long wavy groove with another group of concentric circles of similar proportions. The union in this case is from centre to centre; but two other groups are united by a straight groove from the centre of the one to the circumference of the other group.

Eastward of this stone, on the same ridge, are two sculptured rocks; but the figures are much obliterated: one is given in *Plate VII., fig. 2.*

Scattered over the higher parts of the hill, are four other incised rocks—all with typical figures, but much defaced. The position of one of them is interesting, because near to an ancient British cist of the rudest form cut out of the rock, in which were found the calcined bones of a human skeleton, and a flint arrow head, which had been subject to the action of fire. Besides this, there were several other tumuli on the hill.

On the southern slope of the hill over-looking Coldmartin Lough, a stone was discovered in 1860, with a rough, broken, and jagged surface, and steeply sloping to the southward—*Plate VII., fig. 1.* The figures upon it are rudely made, and, in this respect, resemble those at High Chesters. Thirteen figures are traceable—some pear-shaped, with two and three grooves issuing from the circles; others are rudely arched. The rugged, irregular, and steeply sloping surfaces of this rock and of that at High Chesters, completely dissipate the fancy entertained by some, that the sculptures were used for games; since no games could be played on such uneven and inclined surfaces. A loose stone (now in my possession,) with a figure of four incomplete concentric circles, the cup and radial line, and with two other round hollows connected with the two outer circles, was found among a heap of stones on the Coldmartin grounds—a locality nearer than that of any other to the Cheviot; yet not on the flanks of that porphyritic range, but on the southern flank of the Whitsunbank Hill—*Plate XI., fig. 3.* Probably it had formed part of a cist-vaen.

This assemblage of inscriptions at first sight appeared exceptional, as to their associations; but further research has shewn, not only that they are near to ancient graves, but also not far distant from ancient British camps. On the north side of the hill is the Weetwood Camp, in which were

found a quern made of porphyry, a stone trough, similar in appearance to the pot querns found in Ireland, and three round stone balls artificially formed, about 3 inches in diameter, which it has been supposed were used for some game. More distinctive are the camps which I found on the south side of the hill; no less than five are within a distance of a quarter to half-a-mile; the nearest is a large double camp; the others are very simple in form, being circular and formed of a single rampart of stone, earth, and sods; the rampier of the Fowberry Camp, which is small, has a thickness of 9 feet. Near to one of these camps are traces of several hut circles, shewing that there had been one or more ancient British villages on the slope of the hill.

Chatton Law.

Four miles to the east by north of Whitsunbank, rises Chatton Law to the height of 603 feet above the sea level, with a large flat area on the top. At the west extremity, there is an ancient British camp—small and circular, containing about half-an-acre, and defended by three rampiers. The sandstone rock juts out within this camp, and in several places along the ridge of the hill. Mr. Henry MacLauchland in 1859, discovered here inscribed stones.

One is within the camp—six figures of the common type are traceable, but much of this rock has been quarried away. A row of wedge holes might be mistaken for archaic marks. A perspective view is given of this stone—*Plate IX., fig. 3.*

About 200 yards eastward of the camp, a large area of the fine grained slaty sandstone was formerly covered with sculptures—*Plate X., figs. 1, 2, 3, 4.* In *fig. 1* the inscriptions are remarkable for their great size and geometrical forms; one is 36 inches in diameter, and composed of seven concentric rings with a peculiar curved elevation or crown at the top. From its central hollow, issues a long wavy groove which had linked together other forms now obliterated; one however, still remains of four concentric circles attached to the principal figure, and also joined to the groove by a branch. Those who fancy that these inscriptions symbolize the progress of life, might imagine the smaller circles to be germinations from the larger; similarly as life among zoophytes is generated by buds or gemmules issuing from the old parents. Here, also, there is a diametric groove.

A group at some distance from the preceding, presents another branched plant-like figure—*Plate X., fig. 4.* We have too, a concentric oval, with two grooves proceeding from the outer figure—*Fig. 3.* Thirteen figures were traceable on these two stones in 1859 when I made sketches of them; but as the rock is fine grained and slaty, the weather has, since they were uncovered, obscured some of the forms.

This Law is surrounded by other ancient British remains; within a radius of less than two miles, six other camps of the very olden time can be seen; near one of them, a bronze leaf-shaped sword was found, and the barrows around have yielded interesting examples of ancient British pottery.

Old Bewick.

The great sandstone ridge ranges from Chatton Law southwards five miles to Old Bewick Hill, which is 773 feet above the sea level; and on this elevated ground there are five inscribed stones, either within or near to one of the most remarkable of the ancient British camps. All these inscribed stones were discovered by Mr. Langlands, and they are especially interesting, not only from the antiquities associated with them, but because they were the earliest pre-historic inscriptions observed in Northumberland.

Two of these stones are within the camp; one near to the outer rampart and eastern entrance has five figures traceable; one of which is as deeply cut as three-fifths of an inch; the centre appears as a raised boss, and the whole figure looks like the impression of a horse's foot—*Plate VIII., fig. 4.* The other is about 20 yards northward of this, and close to the rampart—*Fig. 2.* Two figures appear—one is somewhat spiral, the only one of that form among the Northumberland stones; but on carefully examining it, I find that the action of the weather has so worn an original circular form as to give it a spiral appearance.

A large block, $9\frac{1}{2}$ feet by $6\frac{1}{2}$ feet, standing about thirty yards eastward of the camp, had its rough sloping surfaces covered with sculptures; some six figures of the common types are traceable; the largest, which is ten inches in diameter, shows the rounded rings which have been moulded by the action of the elements—*Plate VIII., fig. 1.*

Another block, about 100 yards from the camp, presents two figures of the common type—*Plate VIII., fig. 3.* As this stone appeared detached from the mass of rock of which

the hill is formed, a digging was made around and beneath it, in the presence of Mr. Langlands, Mr. Robert Embleton, and myself, to test the notion suggested by some, that such inscribed stones marked places of sepulture; the stone was turned over and the diggings were carried down to a depth beneath the natural and undisturbed sub-soil; but no evidences of any interment could be seen, nor were any relics found.—*Plate XI., fig. 1.*

The chief group of sculptures is however, on the stone first discovered, which is about 100 yards eastward of the camp—*Plate VIII., fig. 1.* It is of an irregular quadrangular shape, 10 feet by 8 feet, sloping northward, and rising where highest $4\frac{1}{2}$ feet above the ground. Originally rough and uneven on its surface, it has been further deeply hollowed and furrowed, especially on its southern aspect by the play of the elements. Evidence it gives, of the durability of the coarse gritty siliceous moor-land sandstones of Northumberland; standing so high above the ground, it has not like other sculptured rocks had the protection of a growth of peat; and yet, though it has endured the wasting influence of storms, not less than twenty, and it may be some thirty centuries, twenty-seven figures are still traceable, when the stone is viewed by the light of an evening sun.

All the figures are of the common type; indeed, there is less variety on this stone than on any other of similar dimensions. The figures however, being much connected with each other, give the whole a strange maze-like appearance. Imagination could revel amid these complicated forms; life budding might be seen—the passage of life to a higher life—the transmigration of souls—central suns—orbits of planets—attendant satellites—and perhaps too, divinity might be thought symbolised by the central hollow; and the radial grooves penetrating through the circles and beyond them, might represent a Divine influence pervading all the realms of matter and spirit.

For another kind of archaic marking this stone is remarkable. We found on one of the inscribed rocks on Horton estate, a row of shallow pits passing down its perpendicular side; but on this Old Bewick Stone, there is a similar row passing nearly horizontally along its south and east sides, each round hollow being from $2\frac{1}{2}$ inches to 3 inches in diameter, and half an inch in depth; and about 12 inches distant from the other—*Plate IX., fig. 2.* Probably the whole stone had been girdled with them; now

twenty-seven are traceable. Similar shallow indentations have been found on the "Witches' Stone" at Bennington Mains, near Rath, in Mid-Lothian, which forms the capstone of a cromlech;* and also on another cromlech in Guernsey.† It has been supposed that these indentations had been made with the design of splitting the stones; but their association with the sculptures at Bewick, would indicate that they had some superstitious meaning.

The camp, with which these inscribed stones is connected, crests the hill, and is placed on the edge of a high cliff which forms a strong defence on the south. It is a double camp of a rounded form, but with modifications suiting the nature of the site; each camp is semicircular and defended by two strong rampiers, while the combined camp is defended by two other rampiers which extend round the whole. Probably, two distinct families or clans occupied this camp; sufficiently united to erect defences against a common enemy, yet so distrustful of each other, as to have a separate stronghold; arrangements indeed, which mark a period of division and weakness. Within both camps there are several circular foundations shewing the sites of hut dwellings.

Lower down the hill, yet on high ground, on a gentle slope facing the south, there are the remains of another ancient British village or oppidum. The chief fortlet is circular, and about 120 feet in diameter. This had been similar to the fortlets in the Breamish and about Yevinger; but the walls were formed of sandstones. The hut dwellings were from 9 feet to 15 feet in diameter.

Not only have we here the strong forts or castles and the village or town, but also the sepulchres of the ancient British race. Both towards the east and west there are, at no great distance, several barrows or burying places. On Harehope Hill one was opened, and within it was a flint weapon which had on one side a well-formed nick by which it could have been fastened to a pole. On Folly Hill other sepulchral chambers were discovered; and at Blawweary urns were found with the characteristic scorings of ancient British pottery. In a fissure in the rock near the base of the cliff on which the camp stands, a vessel was discovered of a simple bowl shape, made of coarse clay, and devoid of ornament—most probably one of the domestic vessels of the period.

* Wilson's Pre-historic Annals, p. 67

† *Archæological Journal*, vol. iii.

Charlton Moor.

On moor-lands, about $4\frac{1}{2}$ miles to the north-east, and half a mile west of Wandylaw, Mr. Langlands recently discovered another stone. Twelve figures are on it, besides many detached cups.—*Plate VIII. fig. 5.* The figures are single circles with large central cups; the groove does not pass to the centre, but comes from the circumference of each circle. On these moors several ancient British sepulchres have been found—one near to Wandylaw contained a skeleton with the knees drawn towards the head, a very fine bowl shaped urn, and a rude flint arrow head.*

Beanley.

On Beanley Moor, about $2\frac{1}{2}$ miles south-eastward from Old Bewick, and half-a-mile south of Eglingham, and on the slope of the same range of hills, an inscribed stone was discovered by workmen in 1864, almost entirely covered over with an accumulation of vegetable matter—*Plate XI., fig. 2.* It was about 100 yards westward of a remarkably strong fort, called the Ringses, still in good preservation, placed on a hill in the midst of an amphitheatre of higher surrounding hills. This camp is circular, defended by three ditches, and three great rampiers formed of earth and stone; the outer rampier is in some parts near 20 feet in height from the bottom of the ditch, and 20 feet wide. The inner area is about 160 yards in circumference, within which a few circular foundations are traceable. To the westward of the fort are standing stones and circular foundations; and these had been enclosed by a rude stone wall, which may be traced about 100 yards distant from the fort. In this area had been scattered the dwellings of the people, under the protection of the strong fort; and within this ancient village the inscribed stone was found. Scattered over the hill slopes are other hut circles and barrows. There are three figures on this stone—all typical forms, and furnishing another example of the groove passing through the entire circumference of a series of concentric circles. This stone too illustrates the change which long exposure to weather has wrought in the appearance of the sculpturing; where the figures had been covered over with turf, they shew the rude tool marks and jagged edge of the incisions, but where they have been long exposed to the

* Described in "Digging into an Ancient Briton's Grave" by the Author.

weather, the figures are smoothed, rounded, and more artistic looking—this nature, not art, has accomplished. This stone has been taken from its original position, and is now in Alnwick Castle.

A loose stone was found when draining a field west of Beanley. It is but a fragment, and has one typical figure—four incomplete concentric circles around a cup; this may have been connected with an interment—*Plate II., fig. 3.*

Higher up the encampment of the Eglingham hills than the fort, there is a platform of sandstone rock breaking out from the hill; and on the scalp of the rock I detected in several places traces of typical inscriptions.

Rothbury.

The great sandstone ridge ranges from Eglingham and Beanley across the central part of the county towards Rothbury, near to which is a cave in the rock called “Cartington Cove;” concentric circles with central hollows were incised within this cave. Mr. Williamson of Alnwick, from whom I had this information, played around them when a boy more than fifty years ago; and they were then popularly called “Cups and Saucers.” Nearly all of them have been destroyed by the wedges and hammers of quarrymen; but on visiting the spot in 1859, I found sufficient traces to confirm Mr. Williamson’s testimony. This is the most southern locality in Northumberland, where inscriptions on a rock *in situ* have been discovered. Here, too, the sculptures are in the midst of ancient British camps and sepulchres. Most instructive remains of that people were found not far from this cave, at Tosson, where four cists were opened containing the skeletons of a race whose crania were of the Brachy-cephalic type; and by their side were placed urns with the characteristic scorings of the ancient British period, ornaments made of Cannel coal, a bronze buckle, and an iron weapon.*

Stamfordham.

Though no inscribed rock *in situ* has been noticed further southward in Northumberland than Cartington Cove, three loose stones have been discovered by the Rev. John Bigge,† in the parish of Stamfordham, some sixteen miles further southward.

* Proceedings of the Society of Antiquaries of Scotland, vol. iv., p. 61.

† Transactions of the Tyneside Club, vol. iv., p. 333.

One of them, found on the top of a wall near Inghoe, is inscribed with five incomplete concentric circles around a cup, and with a wavy groove issuing from the outer circle into two circular hollows.—*Plate VII., fig. 4.*

The two other stones were taken from an old dyke near to Black Heddon, and both have been traced to interments. One of them, which is inscribed by a series of four concentric circles around a cup, originally covered an urn containing burnt bones under a tumulus—*Plate X., fig. 5*—and the other, which is sculptured with cups or round hollows, formed part of another tumulus about a mile distant.

Jedburgh.

All the inscriptions already described occur in the ancient province of Otadeni; but a discovery made by myself in 1860 extended their range into the country of the Gadani, another of the ancient British tribes. Lying among a heap of stones in Mr. Adam Mathewson's garden, I detected, on a much weather-worn block, defaced sculpturing of the same family character as those in Northumberland—*Plate XI., fig. 6.* There are five concentric circles, central cup, radial grooves, and a string of cups around the outer circle. Forty years ago this stone was built into the wall of a house; but whence it originally came is not known. Doubtless it belongs to the district, and probably had been connected with an interment.

VI. SUMMARY OF THE NORTHUMBERLAND INSCRIPTIONS.

From this survey, we find that fifty-three sculptured stones have been observed in Northumberland, and that there are inscribed on them about three hundred and fifty figures. All of them are more or less connected with ancient British remains. Four of them formed the covers of cists; four were probably covers of cists; two are within a few yards of barrows, beneath which are similar small sepulchral chambers; five of them are within ancient British camps; eight of them are not more distant from such camps than 100 yards, most of the others are less distant than half-a-mile, and none further away than a mile. Their relation, however, to the camps, forts, and hut circles—the dwellings of the ancient British people—is more apparent than to their sepulchres.

VII.—INSCRIBED STONES IN OTHER PARTS OF GREAT BRITAIN.

Before attempting any further generalisation it is important

to notice the localities in other parts of Britain, where similar inscribed stones have been discovered; for the more extended the range of our observations, the sounder basis we shall have for forming an opinion as to their age and meaning.

As long ago as 1785 a drawing was made of an incised slab, which covered a cist at Coilsfield in Ayrshire, in which was an urn filled with incinerated bones. Of this drawing Dr. Wilson gave a copy in 1851.* The principal figure on it is the same as our common typical form; six concentric circles around a cup from which issues a groove; but along with this is a coiled or spiral figure of which we have no example in Northumberland; it is possible, however, that there may be some error in the drawing.

A few years prior to 1857, the inner surface of the covering of a cist, which contained bones and ashes, was found incised with groups of concentric circles around cups, but without the radial line, on Craigiehall estate.† Professor Simpson has recently made an important discovery in connection with this cist. "On the top of the hill he found an old British city, defended on its sides with three walls or ramparts with oblique gates, and in the interior, circular foundations, usually indicating the site and form of the ancient dwellings of the inhabitants." Diggings have exposed the rude cyclopean walls, the whole being similar in structure and arrangements to the ancient British oppida at Greaves Ash and Yevering.‡

In the magnificent work on the sculptured stones in Scotland, by John Stuart, Secy., F.S.A., Edinburgh, there is a plate of an inscribed stone having the typical forms of the Northumberland sculptures. There are concentric circles, as many as six, around a central hollow, and issuing from the circles are two and three grooves. This stone was turned up by the plough on the farm of High Auchinlary in Kirkcudbrightshire; on the same farm is a circle of six standing stones.||

The same work records that in Forfarshire, in an artificial mound near to large pillars, apparently part of a stone circle, a piece of sandstone, about 18 inches square was dug up, on which were two concentric circles§; and we have seen (page 146,) that a stone at Stonehaven, though not containing any

* Wilson's *Pre-historic Annals of Scotland*, 1st ed. p. 332.

† Ibid p. 334.

‡ Professor Simpson will give a detailed description of these discoveries.

|| Stuart's *Sculptured Stones of Scotland*, p. 38, plate cxxiii.

§ Ibid p. xix.

strictly typical figures, yet belongs to the same family as the Northumberland sculptures.

Far north in the Orkneys, at Pickaquoy, near Kirkwall, a tumulus was opened in 1855, and two small sepulchral chambers were found; in the wall of the largest cell was an upright stone, on which was incised a figure of four* concentric circles around a central hollow.

More extensive discoveries of sculptures of the same character as our Northumbrian inscriptions have been made in Argyleshire, in a valley called the Crinan Level, or Moss, which extends some miles northward from the head of Loch Fine. They occur not only on the scalp of rocks protruding from the hill sides, but on standing stones, and on the side-stone of a sepulchral cist.

One stone *in situ* is near to Lochgilphead, and is incised with about ten figures—two of which are of horse-shoe shape, and the others of concentric circles with the cup and radial groove. But the principal group is on a large surface of rock, which is called *Leach-na-Sluagh*;† and there appear to be about eighty figures scattered over this rock. Almost all the forms are concentric circles with a cup, or concentric circles with both the cup and radial groove. Many of these figures are joined together by grooves, in a similar manner to those on the Whitsunbank Stone—*Plate VII., fig. 3.* The groove in a few cases passes through the entire diameter as in *Plate II., fig. 5,* which is from a rubbing sent to me by Professor Simpson. In two figures there are as many as eight concentric circles, and one of the figures is 36 inches in diameter. With the exception however, of a kidney-shaped figure, the forms do not differ from those in Northumberland.

Of more interest are the sculptures on the standing stones. There are three megalithic groups in this valley, from one mile to a mile and a half distant from each other; and each group consists of seven stones, not however in a circle, but standing a little apart, without any definite arrangement. Two stones of the group on Largie Farm, Kilmartin, are sculptured, with round hollows or cups and single circles around a cup with the radial groove. Four stones of the group near Duncraig, are also sculptured with the same incised figures; one of these stones is also perforated from east to west, the hole being oval 4 inches by $3\frac{1}{2}$ inches,

* Petrie in *Proceedings of the Antiquarians of Scot.* vol. ii, part i.

† Gaelic—Flat Rock of the host or army.

much splayed on both sides, and sufficiently large to admit of a human hand passing through. The Stone of Odin, at Stennis, in the Orkneys, had a similar perforation; and through this, hands were joined when solemn engagements were made and Orcadian marriages celebrated. Some half century ago, an ignorant farmer destroyed this venerable relic. Some of these standing stones are 12 feet in height; and not only the inscribed rocks *in situ*, but also the standing stones are striated and smoothed, affording evidence of glacial action in the valley long anterior to the age of these sculpturings. A sketch of one of these inscribed standing stones is given in *Plate II., fig. 4.*

It is important to notice the mineral character of the rock; it is not a greenstone, but an indurated chloritic schist, of about the same hardness as most of the stone celts found in Northumberland—so hard indeed, judging from a specimen taken from one of the standing stones, that I do not think the sculptures have been made by a stone tool. Figures may, it is true, be eroded by rubbing with a flint or other hard stone; but the distinct marks left by a blunt pointed tool prove, that the figures have not been formed in that manner, but by a chipping process. I am therefore of opinion, that these inscriptions have been made by a metallic instrument.

The whole of this valley, as Professor Simpson describes it, is a vast old cemetery with cairns, circles, monoliths, &c.; and the inscriptions here are more directly connected with burial places than those in Northumberland. One incised stone has been found within a cist-vaen, but not as a cover; perhaps it may have been one of the side-stones; and on this is a figure formed of four concentric quadrangles with a central hollow and radial groove — analogous to a form on the Dod-law stone—*Plate VI., fig. 1.* Each of the standing stones may mark a sepulchre, especially one which is surrounded with a circle of small stones. Diggings have not been made around and beneath these monoliths; but recently the Rev. Wm. Greenwell has explored, by diggings, one circle and some of the barrows in the neighbourhood of these standing stones. The results corroborate the conclusion that the sculptures in Argyleshire are of the same age, and the work of the same people, as those in Northumberland. Usually the body was buried in a contracted cist, as in Northumberland, along with an urn and flint instruments and flakes; in one large cairn was discovered a rudely chambered sepulchre;

and in another, there was evidence of two different modes of burial; in the upper or later interment, was an unburnt body with an urn of the common type; but the earlier and lower, contained burnt bones along with an urn of dark pottery, well baked, spherical at the bottom, and ornamented with shallow flutings—a sepulchral vessel of a new type. Along the hill sides skirting the valley, several other cist-vacens have from time to time been exposed; and in these, the bodies were unburnt—the urns of the same character as those in Northumberland, some being accompanied with a bronze dagger.*

On turning again to England, we find one group of concentric circles with a central hollow on “Long Meg,” a pillar standing outside of a stone circle near Penrith, known by the name of “Long Meg and her daughters.” Sir Gardner Wilkinson states, in a paper on the Rock-basins in Dartmoor, that he first observed this figure in 1835.† Mr. Stuart in 1858, noticed a single circle around a cup, on a stone pillar near Shap.‡

On the moors near Pickering in Yorkshire, where many ancient British remains have been noticed, several rocks have been found inscribed with figures identical with those in Northumberland; some groups of concentric circles are from two to three feet in diameter, and have both the central cup and radial groove.

Incised concentric circles have been found under peculiar circumstances near to Dorchester. A tumulus was opened there, and at the depth of three feet, a rough unhewn stone was found with a series of incised concentric circles; below this stone was a mass of flints, six or seven feet in thickness, which lay upon another stone incised with similar circles; and this under stone covered another mass of flints, among which were the fragments of a coarse urn; and below this again, were the remains of six human skeletons, with bits of charcoal and an urn.§

* For information regarding this interesting locality I am especially indebted to Professor Simpson and the Rev. Mr. Greenwell. I give, however, only a condensed view, as from Professor Simpson there may be expected a memoir on the inscriptions, and from the Rev. Wm. Greenwell an account of his explorations.

† Journal of the British Archæological Association, June, 1864.

‡ I am indebted to Mr. Stuart for other information regarding the Scottish stones.

§ Journal of the Archæological Association, vol. iii., p. 51.

From Professor Simpson I have received a rubbing of an inscription recently discovered on the Peak of Derbyshire; the figure consists of six concentric circles around a central hollow—*Plate XI., fig. 9.*

In Ireland many sculptured rocks are to be seen, some merely analogous to those in Northumberland, but others of the same type. Inscriptions on New Grange Mound or Cairn, have been long known; it was opened in 1699, and proved remarkable, not only for the mighty stones which formed its gallery and chambers, but also for the sculptures on the great blocks of stones forming the roofs and sides of the cells. The figures are chiefly spiral, resembling somewhat the scroll-work which ornaments the crosses of a later period; along with these are lozenge and zigzag forms. Such figures are more ornamental than symbolical. Besides these there were other forms, which were regarded by imaginative antiquaries of a former generation, as letters. Professor King has recently examined this so called "Sorcery Chamber," and found that the sculptures have been made by a pointed tool, on glaciated blocks, marked with ice scratches and furrows.

A similar sepulchral chamber at Dowth, contained on a huge stone, between two cells, inscriptions more nearly related to those in Northumberland; one figure is formed of two very rude concentric circles around a hollow; another of a rude circle surrounded by radiating grooves—*Plate XI., fig. 11*; and a third, of two concentric circles around a cross. It must be observed, that a cross as a symbol, is not confined to Christianity.

Recent researches in the south of Ireland have, however, revealed sculptures of precisely the same family character as those in Northumberland. Mr. Stuart some time ago sent me a sketch of the cast of one of these stones, which shews one figure with three concentric circles around a cup, whence issues the radial groove; and by Lord Dunravin, I have been favoured with drawings of two other stones found in the county of Kerry, underneath several feet of bog. One of these is figured in *Plate XI., fig. 8*, to shew how closely the Irish sculptures are allied to the Northumbrian forms; there are concentric circles around cups, united in some cases with grooves.* Very recently, the top stone of a cromlech has

* Of the Irish inscriptions an account is expected from the Very Reverend Dean Graves, D.D.

been discovered in the same county, with the upper surface covered with similar concentric circles, central hollows, and radial grooves.*

VIII.—INSCRIPTIONS BEYOND BRITAIN.

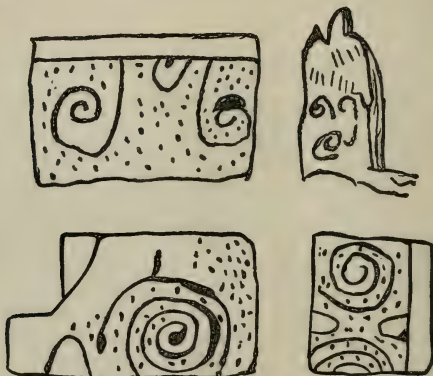
So far as I have been able to ascertain, inscriptions of the same character as ours, have not been discovered beyond the British Islands. In Brittany, where we might expect to find similar remains, there is a great number of enormous standing stones ranged in eleven rows and extending a distance of five furlongs. Fanciful antiquaries have called this a *Dracontia* or *Serpent Temple*. On a cromlech connected with these monoliths, there are spiral and zigzag sculptures resembling those of New Grange; but these I consider ornamental, and not symbolical. Careful researches among these wonderful megaliths during last year, by Mr. Samuel Ferguson and M. René Galles have brought to light another class of sculptures, which appear to possess some significance; the forms are extraordinary, and, in the general aspect of some of them, there is a resemblance to those on the perpendicular face of Cuddy's Cove, in Northumberland. One is similar to the form of the mediæval M; there is a U like character; forms like hatchets with handles, and one the rude outline of a horned quadruped. But while having analogies to the Cuddy's Cove figures, none of them belongs to the same group as the typical concentric circles of Northumberland. Mr. Ferguson regards them, however, as of great antiquity. "The singular taste," he says, "and the barbaric aspect of the objects appear to the writer to refer them to a race having more of the characteristics of the Indian and Polynesian offshoots from the parent seats, than of any of the existing nationalities of Europe."†

Somewhat more analogous to the Northumbrian symbols are some sculptures on rock temples of pre-historic age in the Island of Malta. The following sketches of them have been furnished by Captain Oswald Carr, R.E., son of Mr Ralph Carr of Hedgley, one of our members. These forms, however, are in relief—some are rudely spiral starting from a central boss; others are oval, representing it

* I am indebted to Major Luard for this information.

† Proceedings of the Royal Irish Academy, vol. viii., part 4.

is thought, the egg and serpent, emblems in Phœnician worship.



I have examined the Egyptian, Assyrian, and other eastern inscriptions in the British Museum and elsewhere, but I have not been able to detect any figure like the typical forms of the Northumberland inscriptions. Circles with a central boss may be seen; among Egyptian hieroglyphics there is a circle around a central dot; and the same kind of circle with the addition of a short curve from the circumference, expressive of the God Phre; but nowhere is seen the circle around the hollow along with the *radial groove*.

One of the symbols on the Scottish stones—that which is called the spectacle ornament, formed by two groups of concentric circles round a hollow, the groups being united by two or more curved grooves—has a resemblance to some of the compound figures of Northumbrian stones; but still the Scottish symbol has not the radial groove. The Scottish symbolical stones belong, I believe, to a later period than the Northumberland sculptures—to the age immediately preceding the introduction of Christianity.

IX.—BY WHOM AND AT WHAT PERIOD THE INSCRIPTIONS WERE MADE.

We are now somewhat better prepared to consider the questions—who made these inscriptions and at what period? by what kind of tools have they been made? and what do they mean?

Their wide distribution over the British Islands, not only from the far North in Orkney to the south in Devonshire, but also into Ireland, evidences, that at the period when they were made the whole of Britain was peopled by tribes of one race, who were imbued with the same superstitions, and expressed them by the same symbols.

The opinion has been maintained that these sculptures were the work of Roman soldiers, who, after driving the native population out of their camps, occupied them, and caused the emblems of their own religion, relating to Mithraic rites to be carved on the rocks in the district around. But such rude incisions possess none of the characters of Roman workmanship; nor have Roman relics of any kind ever been found in connection with them. The fancy, however, is completely refuted by the fact that these sculptures occur in districts—as in Ireland and in the Orkneys—which were never trodden by the foot of the Roman conquerors.

The invariable association of these inscriptions with ancient British forts, oppida, villages, and sepulchres, is evidence of all having been the work of the people who dwelt in these villages, and were buried in these tombs. The proof has been cumulative; and it amounts to a demonstration when we observe at Ford West Field, at Black Heddon, at Craigie Hill, at Lochgilphead, and at Kerry, typical symbols inscribed on the covers and side stones of ancient British cists; for these sculptures could not have been of later age than the interments; they may have been earlier, as they might have been quarried from a sacred inscribed stone in the neighbourhood, and placed over or in the cist to give a sanctity to the resting place of the dead. These inscriptions, therefore, are pre-Roman, and may date backwards not less than two thousand years, and I am inclined to believe some five hundred or a thousand years more; because the relics of the period indicate a low degree of civilisation, and would carry us back to the early immigration of Celts into Britain.

I have applied the general phrase ancient British to this period; and avoided using terms more definite, because the question has been raised whether our forts, dwellings, sepulchres, and inscriptions are referable to the Celts, the race who peopled Britain when Cæsar made his descent on the island; or to a prior race—a race of feeblèr organisation and lower civilisation still, who had been driven away or exterminated by an irruption of Celts. The determination of the question is not without some difficult-

arising chiefly from the results of recent investigations into the ethnology of the people who were buried long ages ago in the little stone chests found in the district, covered heaps of stones and earth. The first cranium critically examined and described, was found in a cist at Tosson, near Rothbury, along with urns, cannel coal ornaments, bronze buckle, and an iron weapon; and this proved to be the broad short form called Brachy-cephalic. Since that time, some dozen other crania have been found and examined, all obtained within the area of the ancient province of the Otadeni—from Ilderton, North Sunderland, Alnwick, Grindstone Law, in Northumberland, and from near Dunse and Cockburnspath, in Berwickshire; and all these crania were of the same type as that from Tosson. This shape of skull, however, is not supposed to correspond with that of the modern Celts—of the Irish, Welsh, or Gaels—which is represented to be closely allied to that of the English and other nations belonging to the great Aryan family, whose skulls are of the Dolicho-cephalic type or long oval form.

Retzius and other Scandinavian ethnologists refer the Brachy-cephalic crania to men of the stone age, whose descendants now live in the inhospitable regions of Lapland; and Dr. Wilson, in his last edition of his “*Pre-Historic Annals*,” has adopted the hypothesis of there having been in Britain two pre-Celtic races; and, strangely enough, he has placed the Tosson skull among the stone age, and bronze age men, ignoring the fact that it was associated with an iron weapon.

There is a strong tendency at present to lengthen out the age of our old antiquities; against this we must guard, especially when it is connected with refined theorising which would distort facts to suit artificial classifications. Ethnology alone however, cannot yet be taken as an authoritative guide; the data are not yet sufficiently exact and numerous to enable any one to dogmatise as to the typical form of the modern Celtic skull. Before drawing a conclusion, we must gather additional information from other lines of research. Language gives important evidence; for the old names of hills, rivers, and other prominent objects—names given by the aboriginal inhabitants, which oftentimes survive the revolutions of race—are Celtic. Chalmers in his “*Caledonia*,” has, with great ability and research, proved this. The era of one ancient British Oppidum, similar to Greaves Ash, has been linked with the Celtic race; for in Carn Brae in Cornwall, coins of

the Celtic Kings of Britain have been found; proving that such forts have been in use at the time of the Roman invasion, though their original construction may have been earlier by many centuries.

A people so numerous as the Celts were, when Cæsar invaded Britain—he calls them an infinite multitude—would surely leave some traces of their occupancy of the island; but if the forts, oppida, barrows, and stone circles, which we have in Northumberland, are not their remains, it may be asked, where are they to be found? for if we attribute these remains to an earlier race, we would blot out the records of many centuries from our annals. Taking, therefore, into account various kinds of evidence, we may conclude that the old remains in Northumberland, our sculptures included, belong to the Celtic race, though they may tell the history of many centuries prior to the Christian era. The apparent discrepancy of ethnology with this conclusion is suggestive of further inquiry. May not the type of cranium have gradually changed through long ages of advancing civilisation? or may not the effect have been produced, even by a slight admixture of a new and dominating race?

X.—THE KIND OF TOOL BY WHICH THE INSCRIPTIONS HAVE BEEN MADE.

We may now enquire by what kind of tool the inscriptions were made—whether by stone or metal? The markings have been chipped or picked out, and not made by rubbing; the best preserved figures show that the tool was bluntly pointed. All our sculptures are in sandstone, which could have been incised by such a tool as was used, in far distant pre-historic times, made of basalt, flint, hornstone, trap, or jasper. Metals, however, were known in the district when the sculptures were incised; bronze and copper objects have been found in their neighbourhood; and in some parts of North Northumberland considerable numbers of bronze celts have been discovered, as well as bronze daggers, spear heads, and swords. Querns made of hard intractable porphyry have been taken from the forts about Yevering, and one from the Weetwood Camp; but as these could not have been fashioned by any stone tool, it is therefore probable, that metallic tools had been also used to inscribe the Northumberland rocks. This conclusion is corroborated by the character of the Argyleshire rocks, which are so hard that stone tools could not have

chipped out the inscriptions. Probably the metal was bronze, which seems to have been in considerable use at the period.

XI.—WHAT MEAN THESE SCULPTURES?

What then mean these sculptures? Are they merely ornamental? or are they symbolical, and if so what kind of thought or sentiment do they represent?

If they were ornaments merely, still they would be of great interest, as the first efforts of infant art among its aboriginal inhabitants. The scroll, zigzac, and lozenge figures at New Grange and in Brittany are probably only ornamental, and the work of a later age.

When the earliest public notices were given of the Northumbrian inscriptions, they were supposed to be plans of camps. Mr. Greenwell suggested this view, Dr. Johnston echoed it, and Sir Gardner Wilkinson and others adopted it. In 1853 I proposed a different view, and advocated the notion that they were symbolical figures, representing religious thoughts, and remarked—"I cannot regard them as the amusements of an idle soldiery, nor as plans of camps, nor as exercises of incipient engineers; for their wide distribution, and, notwithstanding differences in detail, their family resemblance prove that they had a common origin, and indicate a symbolical meaning representing some popular thought; and though I cannot spell the rude lettering, I fancy, since they are associated with the last remains of Celtic heroes and sages, they tell of the faith and hope of the aboriginal inhabitants of Britain."* Mr. Greenwell in 1863 adopts a similar view. "It cannot, I think," he says, "be questioned that their import is religious."† Sir Gardner Wilkinson in 1859 says, "I am not disposed to maintain the opinion which at first suggested itself to me, that they related to the circular camps, and certain dispositions connected with them."‡ The camp fancy may therefore be considered abandoned; indeed the wonder is that it should ever have been entertained, for few indeed of the figures represent the arrangements of a camp; both are more or less circular, but the resemblance ends there.

Strange indeed would it have been, if the people of this ancient period had from one end of the country to the other been

* History of Berwickshire Naturalists' Club, vol. iii., p. 130.

† Transactions of the Tyneside Club, vol. vi., p. 21.

‡ On Rock-basins in Dartmoor, p. 117.

employed in drawing entrenchments ; Dod Law, where they are so numerous, must have been the site of a military college. The square figures on the Dod Law stones enclosing spaces covered over with cups, might help the fancy ; but these are rare forms. The common figures do not represent any camp I have seen ; in camps, one, two, or three ramparts and ditches protect a large inner area ; but on stones where there are a number of inscribed concentric circles, the inner circle encloses only a small hollow ; four ramparts there are to a camp, but not more ; but some figures have eight circles. A glance over the plates of figures will discover numbers of them, which by no stretch, even of the wildest imagination, can be likened to camps.*

Though of late there have been many speculative views put forth as to the meaning of these symbols, it is doubtful whether any advance has been made on the general views proposed by me in 1852. The numerous additional facts observed, confirm I think the conclusions—first, that these inscriptions have been made by the Celtic race occupying Britain many centuries before the Christian era ; and second, that the figures are symbolical—most probably of religious ideas. Look at the extent of their distribution, from one extremity of Britain to the other, and even into Ireland ; and say, what could induce tribes, living hundreds of miles apart and even separated by the sea, to use precisely the same symbols, save to express some religious sentiments, or to aid in the performance of some superstitious rites.

Beyond these general views, I confess we wander into the regions of fancy and conjecture.

There are no traditions in Northumberland respecting these inscriptions ; indeed, till discovered by Mr. Langlands, their existence was unknown to the present generation. In “Notes and Queries,” (1858, p. 211,) it is stated, that in a Welsh book on British History, “*Drych y Prif Oesoedd*,” published in 1710, allusion is made to a custom formerly prevalent among shepherds in Wales, of cutting on the turf a labyrinthine form they called *Caer-Droida*—the Walls of Troy ; a practice supposed to commemorate the Trojan origin of the Welsh. A similar custom was continued even to a

* Reference may be made to plans of such encampments given in the Proceedings of the Berwickshire Natural History Club, vol. iv., plates 4, 5, and 15 ; and to the accurate and detailed maps of camps in the Ordnance Survey of Northumberland.

recent period, by the herdsmen on the grassy plains of Burgh and Rockliff Marshes in Cumberland. But from the description of these figures, they appear to have been serpentine and spiral, and more related to the New Grange and Britany sculptures than to the Northumbrian symbols.

Reference there is, to inscribed stones in the Welsh Triads, which say, that on the Stones of Gwidden-Ganhebon, "one could read the arts and sciences of the world; the astronomer Gwydon-ap Don was buried at Caernarvon under a Stone of Enigmas."

In Marstrund, a Norwegian and Lapland tale, there is a reference to traditions respecting inscribed rocks in Lapland; and I quote this, as suggestive of a line of research—"Marstrund sprang upon a high block, and he observed with astonishment, that, the circle in which the tent stood was quite regular in appearance. All these pieces of rock appeared to have been hewn square, and they were *marked with curious lines and furrows*, which could not be the result of accident. He had often before, heard of magic and sacrificial circles of the Lapps on the mountains, and he doubted not that this was a Saita, which was dedicated to one of their many deities."

Following out the idea of the inscriptions being religious symbols, the records of the religion of the Celts and of the character, functions, and influence of the Druids, may help us to a little more definite notion of their meaning. This religion was somewhat in advance of mere Fetichism; for it recognised superior powers ruling in the world, one being regarded as chief; it is probable too, though the evidence of this is not distinct, that the worship of the sun and the heavenly bodies formed part of its ritual; it inculcated the immortality of the soul, along with the doctrine of metempsychosis, or the passage of the soul at death into another body; yet it rose not to the sublime truth of one great first cause; and it was encumbered with some of the remains of Fetichism—magical and necromantic rites. "In Britain" says Pliny, "the magic arts are cultivated with such astonishing success and so many ceremonies at this day, that the Britons seem capable of instructing even the Persians themselves in these arts." "They pretend" says Mela, "to discover the designs and purposes of the gods." Besides being the priests of this religion, the Druids were legislators, judges, school-masters, and philosophers; they discussed many points concerning the heavenly bodies, the motion and extent of the universe

and the world, the nature of things, and the influence and ability of the immortal gods. Altars they would have whereon to perform their sacrifices—symbolic representations of their divinities and of the doctrines they taught; for as Strabo remarks, “superstitions must be nourished by fables and portents;” and figures too, by which to perform their incantations and magical rites. Nothing remains so likely to have served these purposes as the inscribed rocks; and if so used, they would be regarded by the people as sacred stones; and probably enough be themselves objects of worship. Incidental records of a later period, inform us, that stones were worshipped in Britain from an early period; and even after Christianity was introduced, this idolatry was still in use. Canute by a law, “strictly forbade the worship of the gods of the Gentiles; that is the sun, moon, fires, rivers, rocks, trees;” and a canon made in the reign of King Edgar, forbade “will worshippings and necromancings, and divinations and stone worshipping.”

As the functions of the Druids were varied, so might these sacred stones be used for several purposes. On them, as altars, sacrifices may have been slain to avert either personal or state calamities; some of the figures may be the hieroglyphics of the Gods to whom they were dedicated; the philosophical views of the Druids may be symbolically represented in the circles combined with circles on the Routing Linn Stone, which, situated in a wild district and probably in the midst of forests, would be such a place as the Druids would choose, wherein to teach their occult doctrines and practice their superstitious rites. Some of the groups of the concentric circles may show their idea of the motion of the heavenly bodies; and the radial lines might set forth the “influence and ability of the immortal Gods,” as extending through and beyond the orbits of the heavenly bodies; the plant-like figures might enable them to expound “the nature of things” as seen in vegetation; possibly the grooves passing from the centre of one system of circles to another might symbolise the passage of a soul, from one state of being into another and a higher state. And in addition, I cannot but think that one of the chief uses of these sacred stones was for magic and necromancy. The religious and philosophical significancy of the figures would add to their impressiveness on the popular mind, when used for this purpose; and magnify the mysterious power of the Druid priest or magician when he cast a horoscope, or endeavoured by incantations to avert personal or public calamities.

I am sensible I am here wandering into the regions of speculation, or it may be of fancy; but these views are not derived from Assyrian, Egyptian, or Hebrew symbolisation, to which our antiquities have but little relation, since they belong to a different state of civilisation; they are suggested by the records we have of the opinions and practices of the people who, I believe, incised the mysterious looking figures on our rocks.

These inscriptions appear to have served another purpose, in connection with the dead. We have, however, only four distinct cases in Northumberland of their being used in sepulchral chambers, though there are others not far distant from interments. In Scotland, and in Ireland, and in Devonshire, I find more have been seen on cist covers. The digging at Old Bewick failed to show any connection there, between these inscriptions and interments. Their use for the dead was, therefore, I think, only partial and secondary; and arose out of the sacred import of the symbols. The mediæval Christian, as he was dying, gazed with hopeful earnestness on the cross as the symbol of his salvation, and had it placed over his tomb; and he was sometimes buried in earth brought from the Holy Land. And so, as the ancient Briton was laid in his tomb with his weapon and his earthen cup at his side, he might also be supposed to gaze on the sacred concentric circles, as symbolising his hope of immortality.

The Rev. William Procter of Doddington carries this view much further, and considers that the incised blocks are monumental inscriptions; and as he has been long acquainted with them and carefully investigated them, his opinions are entitled to be placed upon record; I am glad, therefore, that he has favoured me with them in writing.

“I am,” says he, “decidedly of opinion that they are all monumental inscriptions in memory of departed friends whose remains had been deposited near them. The oldest monuments in our church-yards bear no verbal inscriptions; and it is not likely that these far more ancient monuments aimed at verbal inscriptions. As in our old church-yard monuments, the sword, the shears, and the cross are emblematical of the sex, profession, and faith of the departed, so it is pleasing to think that the prevailing figure of the circle in these engravings in the rocks may have been designed to symbolise the immortality of the soul. Or the central dot may indicate the individual deceased, the surroundings have reference to his

family or temporal circumstances, and the tract from the centre through them may indicate his exit from this round world and its employments. The Druids were astronomers and sun worshippers."

Did the ancient Britons possess letters of their own? Cæsar says the Druids did not commit their instructions to writing, though in other things they used Greek characters. No inscriptions in letters have ever been even discovered, unless we regard the Ogham characters as the Celtic alphabet. Oghams are lines upon or through another horizontal or perpendicular line; and the number and position of these lines determine the letter power. Inscriptions of this character occur chiefly in Ireland, and some few in Scotland. Our symbolical figures are not letters, though they may have a hieroglyphic power; they are sufficiently numerous for this purpose, for there are about one hundred and fifty different forms distinguishable on the Northumberland rocks. On one of them, there are lines similar to an Ogham; nine straight lines, appearing like rays, are incised above the outer circle of one of the figures on the Routing Linn rock—*Plate XI., fig. 11.*

There is an Ogham inscription around a circle on a stone at Logie, on which is also incised the symbolical figures peculiar to Scotland; and on the Dowth sepulchral chamber there are circles, around which are lines similar to what we have at Routing Linn—*Plate XI., fig. 12.**

More approaching to letter characters are the strange figures on Cuddy's Cove; one of these resembles a mediæval M. A cross appears among them; but from this it does not follow that these figures are of the Christian era, for the cross in one form or other was used as a symbol prior to the birth of Christ. Though doubtful whether they are of the same age as the other inscribed rocks in Northumberland, I yet believe them to be archaic; and I am still more inclined to this view, from observing some general resemblance between them and sculptures on Brittany sepulchres, which are undoubtedly of great antiquity. No light can I throw on their meaning.—*Plate XII., fig. 2.*

Those who are not content unless every mystery is fully explained may feel dissatisfied, that after all the labour and

* Professor Simpson informs me he had detected a rayed or fringed figure, similar to the Routing Linn form, on the rocks in Argyshire.

research bestowed on the inscribed rocks, we cannot read them off as from a lettered book. Before, however, more definite results can be arrived at, further investigations must be made in other parts of the world. Two lines of research may yield information; one among the Laps in the far north, and the other, with more hope of success, in the early home of the Aryan family. Something, however, has been achieved—materials for aiding in the fuller solution of the problem have been placed on record—an advanced starting point made for future inquiries—and a description and representation preserved of marvellous sculptures which time and the elements will eventually obliterate.

PLATES.

PLATE I.

Routing Linn Rock, on the scale of one-quarter of an inch to the foot.

All the other Northumbrian inscriptions are drawn on the scale of half-an-inch to the foot.

PLATE II.

Figs. 1 and 2.—Hunter's Moor, reduced from rubbings made by Mr. William Procter, jun.

Fig. 3.—Beanley.

Fig. 4.—Standing stone near Lochgilphead, reduced from a sketch from Professor Simpson.

Fig. 5.—Lochgilphead.

PLATE III.

Figs. 1, 2 and 3.—Dod Law.

Fig. 4.—High Chesters.

PLATE IV.

Figs. 1, 3 and 4.—Harelaw.

Figs. 5, 6 and 7.—Horton Moor.

Fig. 2.—Dod Law.

PLATE V.

Figs. 1, 2, 3, 4, 5, 6, and 7.—Gledlaw, reduced from rubbings made by Mr. William Procter, jun.

PLATE VI.

Figs. 1, 2, 3 and 4.—Dod Law.

PLATE VII.

Figs. 1, 2 and 3.—Whitsunbank.

Fig. 4.—Inghoe.

PLATE VIII.

Figs. 1, 2, 3, and 4.—Old Bewick Hill.

Fig. 5.—Charlton Moor.

PLATE IX.

Fig. 1.—Old Bewick.

Fig. 2.—Old Bewick. View of the perpendicular side of the stone, the upper surface of which is given in *Plate VIII.*, *fig. 1*.

Fig. 3.—Perspective view of rock in Chatton Law camp.

PLATE X.

Figs. 1, 2, 3 and 4.—Chatton Law. Reduced from sketches made by the Author in 1859, and from rubbings by Mr. Thomas Tate.

Fig. 5.—Cist cover, Black Heddon, Stamfordham. Reduced from a rubbing made by the Rev. John Bigge.

Fig. 6.—View of figures on Routing Linn rock, showing the effect of weathering.

PLATE XI.

Fig. 1.—Horton Moor. Perspective view of the side of the rock, the upper surface of which is given in *Plate IV.*, *fig. 5*.

Fig. 2.—Beanly Moor.

„ 3.—Coldmartin.

„ 4.—Horton Moor.

„ 5.—Cist cover, Ford West Field.

„ 6.—Jedburgh.

„ 7.—Lochgilthead.

„ 8.—Kerry, Ireland, from a sketch sent by Lord Dunravin.

„ 9.—Peak of Derbyshire, from a rubbing sent by Professor Simpson.

„ 10.—Routing Linn.

„ 11.—Dowth Sepulchral Chamber.

PLATE XII.

Fig. 1.—Inscriptions on rock west of a barrow near the boundary of the Doddington and Weetwood estates. See page 151.

Fig. 2.—Inscriptions on scalp of rock, Cuddy's Cove. See page 152.

„ 3.—Inscriptions on the perpendicular face of the rock, Cuddy's Cove. See pages 152, and 177.

Fig. 4.—Sculptures on rock temples in Malta. See page 168.

ERRATA.

Page 156, fourth line from the bottom, for *Plate VIII.*, *fig. 1*, read *Plate IX.*, *fig. 1*

Page 157, eighth line from the top, for *Plate XI.*, *fig. 1*, read *Plate VIII.*, *fig. 3*.

Notes on the Botany of Cheviot. By G. R. TATE, M.D.,
Royal Artillery.

THE Cheviot range of mountains in Northumberland is formed of porphyry, which in some parts passes into syenite—both being fire formed felspathic rocks. Cheviot, the highest hill, from which the whole range takes its name, attains an altitude of 2658 feet; snow generally lies upon it during half the year, and in severe winters has been known to remain in the highest ravines from September to July. On May the 27th, 1860, snow still lay in Goldscleugh to the

depth of nearly twenty feet. The hill is most easily ascended from Langleyford. On the north the ascent is steeper, but more picturesque.

Nearly the whole of the interesting plants of the Cheviot range occur in the ravines of Goldsclough and Henhole, where the porphyry cliffs attain a height of nearly 100 feet.

The following more uncommon plants are met with near the base of the mountain :—

TROLLIUS EUROPÆUS (Lin.) Banks of Wooler water and Common Burn.

VIOLA PALUSTRIS (Lin.) In bogs, ascending to 900 feet.

CHRYSOSPLENIUM ALTERNIFOLIUM (Lin.) Damp ground about the base.

CARDUUS HETEROPHYLLUS (Lin.) In woods at the base.

GERANIUM SYLVATICUM (Lin.) In woods at the base.

PYROLA MINOR (Lin.) In woods at the base.

GENTIANA CAMPESTRIS (Lin.) Heathy ground about the base.

GALEOPSIS VERSICOLOR (Curt.) Gravelly bed of Wooler water at the base.

PARNASSIA PALUSTRIS (Lin.) In bogs, ascending 900 feet.

TEESDALIA NUDICAULIS (R. Br.) Gravelly bed of Wooler water and Colledge.

EPILOBIUM ANGUSTIFOLIUM (Lin.) Banks of Common Burn and Wooler water.

HIERACIUM PRENANTHOIDES (Vill.) Banks of Common Burn and Wooler water.

HIERACIUM UMBELLATUM (Lin.) Banks of Common Burn.

CREPIS SUCCISÆFOLIA (Tausch.) Banks of Common Burn and Wooler water.

CREPIS PALUDOSA (Moench.) Base of Cheviot; ascends 1900 feet.

CORYDALIS CLAVICULATA (D.C.) Heathy places about the base; ascends 900 feet.

HABENARIA VIRIDIS (R. Br.) Heathy places about base.

HABENARIA BIFOLIA (R. Br.) Heathy places about base.

HABENARIA CHLORANTHA (Bab.) Heathy places about base.

GYMNADENIA CONOPSEA (R. Br.) Heathy and damp places about base.

LISTERA CORDATA (R. Br.) Heathy places about base; ascends to 1000 feet.

RUBUS SAXATILIS (Lin.) Banks of Wooler water.

GNAPHALIUM SYLVATICUM (Lin.) Heathy places about base.

SEDUM VILLOSUM (Lin.) In bogs near base, and ascending to 1900 feet.

CAREX PALLESCENS (Lin.) Banks of Wooler water.

CAREX LÆVIGATA (Sm.) Banks of Wooler water.

BOTRYCHIUM LUNARIA (Sw.) Heathy places about base.

POLYPODIUM DRYOPTERIS (Lin.) Banks of Wooler water. In Goldsleugh it ascends to 1500 feet.

POLYPODIUM PHEGopteris (Lin.) Banks of Wooler water. In Goldsleugh it ascends to 1500 feet.

LASTREA OREOPTERIS (Presl.) Base, and ascends 1400 feet.

On the higher parts of Cheviot, the following species are met with.

SAXIFRAGA STELLARIS (Lin.) Goldsleugh and Henhole, from 1500 feet to 2600 feet.

SAXIFRAGA HYPNOIDES (Lin.) Goldsleugh and Henhole, from 1500 feet to 2000 feet.

EPILOBIUM ALPINUM (Lin.) Goldsleugh, from 2000 feet to 2500 feet.

EPILOBIUM ALSINIFOLIUM (Vill.) Goldsleugh, from 1000 feet to 1500 feet.

CORNUS SUECICA (Lin.) Near a spring at an altitude of 1900 feet.

RHODIOLA ROSEA (Sm.) Henhole, 2000 feet.

VERONICA OFFICINALIS, VAR. (Lin.) HUMIFUSA. Goldsleugh, 1800 feet.

POA BALFOURII (Par.) Goldsleugh, 2000 feet.

HIERACIUM MACULATUM (Sm.) Goldsleugh and Henhole, 1500 feet to 2000 feet.

RUBUS CHAMÆMORUS (Lin.) Plentiful on the summit, (2658 feet,) and descends to about 1500 feet.

VACCINIUM VITIS-IDÆA (Lin.) From 1000 feet to summit, (2658 feet.)

FESTUCA OVINA, VAR. (Lin.) VIVIPARA. Summit, (2658 feet.)

CAREX RIGIDA (Good.) Summit, (2658 feet.)

LYCOPodium ALPINUM (Lin.) From 1900 feet to 2658 feet.

LYCOPodium SELAGO (Lin.) From base to summit.

LYCOPodium CLAVATUM (Lin.) From 1000 feet to 2000 feet.

ASPENIUM VIRIDE (Huds.) Goldsleugh, about 1900 feet.

CYSTOPTERIS DENTATA (Sm.) Goldsleugh and Henhole, from 1400 feet to 2000 feet.

ALLOSORUS CRISPUS (Bernh.) Goldsleugh and Henhole, from 1200 feet to 2000 feet.

Ornithological Notes. By JAMES HARDY.

1. The JACKDAW. Of recent years, this *hempie* of a bird has taken to colonizing the precipitous part of the sea-coast in the parish of Cockburnspath. Persecuted at the Pease Bridge, they have fled to those secluded retreats where the gun of the game-keeper and the stone of the "picknicker" seldom annoy them. Their numbers are greatly on the in-

182 *Rain Fall at Glanton Pike and Lilburn Tower in 1864.*

increase; a few being still left at the Bridge, while the others have spread to the east and west. They commit a deal of mischief; pulling the thatch off and the corn out of stacks, straw after straw; knocking off the heads of wheat and the pods of beans, when nearly filled; conveying the wheat off in their bills and extracting the beans from the pods, and like the rook, skinning them previous to their being swallowed; digging up newly springing grain and recently formed potatoes; all such descriptions of roguery do they practise. At the same time, it is a pretty sight in a calm morning or evening to witness their spiral evolutions, as with much clamour, they rise and fall high up in the clear atmosphere, ere they take their flight a-field, or finally settle down to roost.

2. A PEREGRINE FALCON was shot during the summer on Aikieside, near the Pease Bridge, having been attracted to the pheasants which are bred there. It had a mate which luckily escaped.

Rain Fall at Glanton Pike, Northumberland, in the Year 1864; communicated by FREDERICK W. COLLINGWOOD, Esq.; and at Lilburn Tower, Northumberland; communicated by EDWARD J. COLLINGWOOD, Esq.

GLANTON PIKE.		LILBURN TOWER.	
	Inches.		Inches.
January . . .	1·66	January . . .	0·900
February . . .	0·76	February . . .	2·410
March . . .	5·08	March . . .	2·577
April . . .	1·43	April . . .	0·914
May . . .	2·53	May . . .	3·055
June . . .	1·91	June . . .	0·869
July . . .	0·92	July . . .	1·324
August . . .	0·94	August . . .	0·918
September . . .	1·47	September . . .	2·620
October . . .	8·56	October . . .	10·582
November . . .	1·14	November . . .	3·039
December . . .	2·29	December . . .	2·757
Total . 28·69		Total . 31·965	
Height of Rain Gauge—Above ground, $7\frac{1}{2}$ inches; above sea level, 534 feet.		Height of Rain Gauge—Above ground, 6 feet; above sea level, 290 feet.	

PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

Address delivered at Berwick, on the 28th of September, 1865. By FREDERICK J. W. COLLINGWOOD, Esq., Ganton Pyke, President.

GENTLEMEN,

“Go to the ant, thou sluggard, consider her ways, and be wise,” would in my opinion form a very appropriate motto for a club such as ours, consisting, as it does, of a body of men calling themselves naturalists, and whose province it is to study and investigate the wonderful works of God, and to record their observations for the benefit and instruction of society in general.

As President of this Club, it is my duty to recapitulate the transactions and discoveries as they have occurred at our several meetings during the past year; and though I myself have been but as a drone in a hive of bees, yet as a drone I have my use, if it be only to record the result of our labours and researches during the time I have had the honour to fill this chair as your President. There is, however, little left for me to say—three out of the four places of meeting having been previously visited, and ably notified by former presidents.

The Anniversary Meeting of the year 1864, was held at Berwick, on the 29th of September, when there were present—Mr. William Stevenson, President; Revds. W. Darnell, F. R. Simpson, Mark Pattison, P. Mearns, A. Davidson, E. Wilkinson, J. Irwin; Drs. J. Wilson, Charles Douglas; Messrs. George Tate, Secretary, David Milne Home, R. Home, R. Douglas, W. Crawford, Fairfax Fearnley, J. Clay, P. Clay, J. C. Langlands, S. Smith, T. Y. Greet, T. Tate, T. Friar, E. Friar, W. Boyd, J. Paxton, Jones Merrott, and W. Watson.

After breakfast at the Red Lion Inn, the accounts for the year were examined and approved of. It was then reported, in reference to the proposal for reprinting the three first volumes of the Proceedings of the Club, that the number of subscribers as yet obtained, was not sufficient to warrant the Club carrying out such proposal; and it was therefore resolved to appoint Mr. Robert Douglas, the Rev. Peter Mearns, and Mr. T. Y. Greet, a committee to make further inquiry, and to report thereon to a future meeting of the Club.

The following resolutions, of which notice had been previously given, were considered and agreed to:—

1. That the Members assembled at breakfast at any Meeting of the Club, be not allowed to alter the dinner hour named in the printed circular.

2. That the election of a new member be by a majority of the votes of Members present at the Meeting when the proposal is made; that the votes be taken by ballot; and that an entrance fee of 10s. be paid by the member elected, who shall be entitled to receive a copy of the Proceedings of the Club for the year in which he is elected.

So much time was occupied with business arrangements, that the walk of the day was necessarily short; often, however, as the district around Berwick has been explored by the Club, the objects of interest are far from being exhausted. The geology of the coast, from the Tweed to Cheswick, was upon this occasion examined under the able guidance of Mr. Tate. The strata exposed, present one of the most

comprehensive sections of the mountain limestone in the north; the various limestone sills in the upper part of the group, are seen from Cheswick to Scremerston; and nearer to Spittal and Tweedmouth, the lower portion of the group (in which are the valuable coal seams now wrought,) can be examined. Much interest was taken in the contorted, curved, and arched limestone strata near Scremerston; an account of this section, with lists of the organic remains in the several beds, is in course of preparation.

After dinner the President read an able address, and nominated Frederick J. W. Collingwood, Esq., as President for the ensuing year, which was unanimously agreed to.

The following Members were then elected—Dr. Robert Wilson, of Alnwick, Mr. Christopher Seymour Bell, of Denwick, Mr. J. Towlerton Leather, of Middleton Hall, Belford, Mr. James Logan, of Newcastle, and Mr. George Webster, of Edinburgh. The following were nominated as Members—Mr. Ralph Forster, proposed by the Rev. W. Darnell and seconded by Mr. R. Home; the Rev. William Clark King, of Norham, proposed by Mr. T. Y. Greet and seconded by the Rev. W. Darnell; and Dr. Colville Brown, proposed by Mr. Paxton and seconded by Mr. Septimus Smith.

The Places of Meeting for the ensuing year were fixed, viz. :—

Norham,	the last Thursday	in May.
Hownam,	„ „	June.
St. Abb's Head,	„ „	July.
Rothbury,	„ „	August.
Berwick,	„ „	September.

The first Field Meeting of the year 1865, held at Norham on the 25th of May, was attended by forty-three Members and their friends, who, by special invitation, breakfasted with the Rev. W. C. King at the Vicarage, and afterwards dined with Mr. D. M. Home at Milne Graden. Before breakfast, Mr. G. Tate exhibited and gave an account of a curious recently formed rock—shaped like a saddle—illustrating the rapid deposition of several strata under peculiar conditions;

and also some stone celts from the neighbourhood of Alnwick, one of which had undergone sharpening twice after it had been made. The Rev. William Greenwell shewed and described a variety of bronze and bone implements from Heathery Cave, Durham, "the belongings" of a family suddenly destroyed during the bronze era. Dr. Campbell described the structure of a *Coluber Natrix* and a *Pelias Berus* captured at Abbey St. Bathans; and Mr. Adam Mathewson shewed several polished sections of plants with structure, out of the rocks near Norham.

After breakfast, under the guidance of the Vicar, the noble church—one of the finest examples of the later Norman style in the north—was visited; and with much interest were examined the Saxon sculptured stones built up into a pillar in the church-yard. It was strongly urged that these instructive fragments should be placed somewhere within the church, in order to protect them from the wasting influence of the weather.

The brave old castle was next particularly examined; and it was concluded, from a critical consideration of its architectural characters, that there are now no recognisable remains of the original tower built by Flambard, the fighting bishop, in 1121, and which old chronicles say was destroyed by the Scots. But of the very strong tower built by Pudsey—about 1158—there are considerable portions remaining in the east and south walls. The west wall and part of the south wall, stated by Raine to be Pudsey's work, belong to a period more recent by at least a century and a half. Leaving the castle, the party proceeded to Morris Hall, the residence of Mr. Greet, who most kindly exhibited and explained a valuable collection of relics found in the old castle and the neighbourhood; amongst which were curious perforated leaden disks, similar to spindle weights, some of them being ornamented; cannon balls, formed of cubes of iron encased in lead; and a rare type of a stone celt—found near Coldstream—contracted near to the blunt end.

Here the Club divided into two parties; one guided by

Mr. D. Milne Home went across the country, in carriages provided by him, to the circle of standing stones near Grindon Ridge, and to the ruins of Duddoe Tower. The other party—led by Mr. G. Tate—strolled up the river to explore the botany and geology of the valley; *Asplenium Ruta-muraria* was found growing sparingly amongst the rocks. The rocks examined belong to the Tuedian group, the lowermost division of the carboniferous formation; teeth and scales of *Rhizodus Hibberti* and of other ganoid fish were discovered, and the remains of *Lepidodendron* and other plants. A large slab was seen opposite to Milne Graden, telling the story of an ancient estuary beach; long, deep, wavy ripple marks were there, and the tracks of numbers of organisms, which had crawled over that beach; and besides, there were the borings of other creatures passing perpendicularly through the strata. A little above Milne Graden—at Tweed Mill—are remains of *Araucarian* trees associated with species of *Orthoceras*, *Pleurotomaria*, and other marine mollusks.

The two parties reunited, by appointment, about 3 o'clock at Twizel Castle. This castle belongs to the Blake family, and stands upon the margin of the river Till, near its junction with the Tweed; it commands a most extensive and beautiful view; the Cheviot range to the south, the Eildon Hills to the west, Berwick Law to the north, and the sea to the east.

At Milne Graden, a remarkable and magnificent specimen of a fossil tree, above 20 feet in length, found in an adjacent quarry, was shewn by Mr. D. Milne Home, who afterwards conducted us to dinner.

After dinner, Mr. Robert Embleton, read a paper "On the Nidification of the Fifteen Spined Stickleback," and exhibited two of its nests; and the Rev. Robert Greenwell, "Notes of the Opening of Ancient British Tumuli in North Northumberland in 1863." The Rev. W. C. King was requested to undertake the exploring of the stone circle near Grindon Ridge.

The Members proposed at the last Meeting were elected; and the following nominations were made, viz.:—the Rev.

James Farquharson, Selkirk ; Dr. Henry Richardson, Sheriff of Berwick ; Mr. William Bell, Jedburgh ; Dr. Fawcus, Ford ; Mr. Thomas Allan, Berwick ; and Mr. William Henderson, Fowberry Mains. It was agreed that the Meeting at St. Abb's Head should be held on June the 29th, and that at Hownam on July the 27th.

The second Field Meeting of the year was held at St. Abb's Head on the 29th of June ; present—Mr. Frederick Collingwood, President ; Revds. John Walker, Thomas Leishman, P. Mearns ; Hon. F. Russell ; Dr. Charles Douglas ; Messrs. George Tate, Secretary, D. Milne Home, J. C. Langlands, W. Stevenson, Thomas Clutterbuck, E. Friar, Archibald Jerdon, William Boyd, James Hardy, William Elliott, John Orde, J. Waite, Charles Watson, William Crawford, Septimus Smith, Thomas Landale, John Clay, and Edward Allen ; as visitors, the Rev. Dr. Leishman, of Glasgow ; Mr. M'Gall ; Mr. Renton ; and Mr. Wilson, of Coldingham.

By previous arrangement we assembled at Ayton, where an omnibus and other conveyances awaited to take us according to the programme ; firstly, to Coldingham, where Mr. Wilson kindly guided us through the Priory ; but as this has been so ably described in our former proceedings, I need not add any further observations. Two new objects, however, were pointed out ; a font, rudely fashioned out of a coarse porphyry rock, and which had belonged to the old church on the Kirk Hill ; and the fragment of the shaft of a Saxon cross, with characteristic knot or interlacing work ; this had been built into the wall of a house in the old town of St. Abb's—now entirely destroyed—and it had probably been brought from Ebba's Nunnery.

Secondly, to Coldingham Loch, a sheet of water about 30 acres in extent, and 250 feet above the level of the sea. Thence we proceeded on foot to Tunlaw—or Town-law—camp, where there are two oblong British camps, with three well defined ramparts to the S.W., and towards the east, facing the sea, there is a precipice of about 300 feet. At Earnsheugh, on our way to Petticowick, the peregrine falcon

was observed, and its graceful movements watched for some time; this is one of the breeding places. At Petticowick there is a junction of greywacke and porphyry, the latter covering the former at one side of the little bay; but perhaps the most remarkable feature here to be seen, is the complete separation of these two formations by an elongated valley, which, fifty years ago, was a quagmire, but has recently been drained. Leaving Petticowick, we ascended Headland—the western of the three hills composing St. Abb's Head—which is interesting on account of the ruins still visible on a neck of land, supposed to be the remains of St. Ebba's Nunnery; the building is 26 yards long by 9 wide, and the walls have been set due E. and W. by the sun. This neck of land has been fortified by means of a deep fosse, a drawbridge; and a strong wall towards the land side; portions of which wall still remain. It is known amongst the country people under the name of "Ramfauds," or ramparts.

The light house, which was erected three years ago and is well worthy of a visit, stands upon Harelaw—the middle hill of St. Abb's Head—and is about 200 feet above the sea. Here we had an opportunity of examining a portion of the porphyry rock—laid bare for the purpose of inspection by the kind permission of Mr. Herriott—which had, by some agency (not yet satisfactorily explained or understood by geologists,) been ground down, smoothed, grooved, and striated in a most remarkable manner; this is attributed by some to the action of ice, but I am inclined to believe it to have been done by the sea, before these rocks were upheaved into their present form by volcanic agency.

Kirk Hill—or the most eastern of the three hills—was next visited; on its summit are the remains of a chapel (hence the name), and a burial ground. The chapel is known to have been erected by Robert Walworth, Prior of Coldingham, about the year 1380, and is almost of the same dimensions as St. Ebba's Nunnery. Descending by the Old Kirk Road, near the site of the old town, we crossed the quagmire and proceeded to North Field Farm, where our carriages met us and conveyed us back to Ayton to dinner.

After dinner, a paper "On the Early History of the Monastery of St. Ebba and the later Priory of Coldingham," by Mr. John Stuart, F.S.A., Edinburgh, was read. The Members proposed at the last Meeting were elected, and the following were nominated, viz.:—the Rev. Edward Home, Home Field, Coldingham; Mr. Frederick Roy, younger, Nenthorn, Kelso; and Dr. William Campbell, Dunse.

The thanks of the Club are specially due to Messrs. M'Gall and Renton for supplying conveyances for the use of some of the Members; to Mr. Wilson for his guidance and information on various subjects worthy of note; and to Mr. Herriott for his kind assistance in forwarding the objects of the Club. The day proved all we could desire for such a ramble, and the party separated with hearty wishes soon to meet again.

The third Field Meeting took place at Hownam on the 27th July, among the porphyritic hills which are an extension of the Cheviot range into Roxburghshire. This secluded spot is distant from railways, yet there was a large assemblage of Members, there being forty-five present. In going to Kelso by train, some cut corn was observed on the banks of the Tweed near Fireburn Mill; so early a commencement of harvest has not been known since the year 1826. At Kelso, conveyances awaited to take us to the place of meeting; *en route* we halted at Linton to look at the church, which is picturesquely situated upon a hill of sand, said to have been riddled through a sieve by two sisters in order to save the life of a brother; and at the last sieve-full the riddle broke.

On arriving at Hownam, the first object of interest was the inspection and examination of some curious terraces upon the sides of the hills in the vicinity; these terraces are arranged in such various directions that they cannot be the result of water—like the parallel roads in Glen Roy; they are evidently not fortifications, and therefore can only have been thus formed for the purpose of cultivation alone. Sections had been cut through three of the terraces, shewing them to be nothing but earth containing *angular* fragments of porphyry, none such as had been *rounded* by the action of water.

Our next object of interest was an ancient fort, on an adjoining hill, called "The Rings," and said to contain a number of circular foundations, the dwellings of the Ancient British people; of the fort there can be no doubt, in-as-much as there are distinct rampiers on the northern side, but I much question the ancient circular dwellings, as I was informed that stones had been taken some years ago from the inside of the fort, in order to erect a wall further to the south. Near this fort are "The Shearers"—more than twenty stones standing nearly in a line and extending above 100 yards—these stones are embedded about a foot in the earth; tradition says they were shearers who were transformed into stone in consequence of reaping corn upon a Sunday. There were various opinions about "The Shearers," some thinking they were a part of the defence of the fort, others, that they had been a fence to keep cattle, &c., within reach; but I confess they are mysterious and I cannot agree with either theory, for these reasons—they would have formed but a poor defence to the fort, as the land is nearly level for some considerable distance in that direction; and, if they had been erected for the purpose of confining cattle, &c., a larger space would have been enclosed. The party here separated, some returning towards Hownam Mains, others (myself amongst the number), visiting Hownam Kirk, where there are several ancient burial places and curious tombstones. Affixed to the kirk is a portion of a chain called "The Jougs," which in former times had a circular iron to fit the neck attached to it, for the purpose of placing offenders against morality, &c., in durance vile, and exposing them before the whole congregation.

In the neighbourhood of Hownam, at Linton Loch, about twenty-five years ago, a number of skeletons of deer were found about 20 feet deep in peat moss; only one skull and a pair of magnificent antlers have been preserved, the remainder having crumbled away on exposure to the air. The weather during the day was most favourable, and dinner was served at 4 o'clock in the open air, after which the Members

proposed at last meeting were elected, and the following were nominated, viz. :—the Rev. William Lee, Roxburgh; Rev. George Watson, Hownam; Mr. James Rutherford, Kelso; Mr. William Purvis, Linton Burnfoot; and Mr. Sholto Douglas, Hownam Mains. Short papers were then read upon Heronries at Swindevan by Dr. Scott, and at Chillingham Castle by Mr. Thomas Tate. Mr. Stuart, the Secretary of the Society of Antiquaries of Scotland, laid before the Meeting Plates of Ancient Crosses, among which were fine drawings of the Saxon crosses at Warkworth, Rothbury, and Holy Island.

The thanks of the Club were unanimously voted to the Duke of Roxburgh, Mr. Douglas, Mr. Orde, Mr. Purves, and Mr. Gray, owners and tenants of the district explored, for their kind assistance given to the Club in carrying out the object of the Meeting, and also to the Rev. Thomas Leishman, of Linton, for his most hospitable invitation to breakfast for any Member of the Club who could arrive in time.

Our fourth and last Field Meeting was held on the 31st of August at Rothbury; present—Mr. Frederick Collingwood, President; Revds. R. Jones, G. S. Thomson, E. Mangin; Drs. F. and C. Douglas; Messrs. W. Boyd, John Boyd, Robert Middlemas, J. Wheldon, E. Allen, Arch. Jerdon, Walter Elliot, and John Thompson.

In ancient deeds and records the name of this place is *Rathbury*, *Robirie*, and *Routhbiry*; the first is probably the original appellation, and is derived from the British *Rhath*, signifying a *cleared spot*. Major Light, an officer, formerly in the 25th Foot, who obtained the thanks of the first officers in the British Service for his correct and valuable drawings of Gibraltar, was struck with the resemblance which the situation of Rothbury bears to that impregnable fortress.

In consequence of the unsettled state of the weather in the early part of the morning, there was but a small attendance of Members, and most of these came so late, that it rendered it impossible to carry out the programme of the day, and

unfortunately neither of our secretaries were able to be present.

After breakfast we proceeded to view the church, the interior of which was restored a few years ago; in it there is a very fine old font, the basin bearing date 1664, but the shaft is evidently much more ancient, being part of a Saxon cross. On leaving the church we visited the "Thrum," where the river Coquet is confined by rocks into a very narrow gorge, which we passed by means of a ladder laid across; formerly the distance between the rocks—where narrowest—measured only about one yard, and was easily stepped over; but the passage has now been considerably widened, in consequence of a boy having been drowned in attempting to jump across. After examining the botany of this neighbourhood, we proceeded to the "Reiver's Well," about half-a-mile down the river, and upon the road to Brenkburn; there are here two abundant springs of clear pure water, but which of the two is the "Reiver's," I am sorry to say I am unable to state. As the day was now advanced, we determined not to proceed to Brenkburn Priory, but to visit Sir William Armstrong's new residence—Cragside House—which is nearly completed, and is in the Swiss style of architecture. We fortunately found Sir William at home, and he was kind enough to grant us permission to wander about the grounds; these are being laid out with great taste, and planted; the rocks are to be adorned with various species of ferns, heaths, &c. Sir William informed us that he had lately discovered some circular dwellings on the moor to the eastward, similar to those at Greaves Ash, and had examined one of them, in which were found ashes; but, as the distance was too great, and our time too limited to visit them, we turned our steps back to Rothbury. After dinner the Members proposed at the last Meeting were elected.

Before I retire from the chair, permit me to offer you my hearty thanks, not only for the honour you conferred upon me in electing me your President, but for the very kind and

indulgent manner in which you have received and supported me in my office; my special thanks are due to our worthy and indefatigable Secretary, Mr. Tate, who has so ably assisted me with the minutes and details of our proceedings during the past year, which I have now, to the best of my ability, endeavoured to lay before you. In conclusion, allow me to congratulate the Club on its increasing prosperity; several new members have been elected, all of whom will, I trust, use their best exertions and talents, each to contribute something towards the general information and usefulness of the Club, to the advancement of science and increase of knowledge. May we all continue to be united in the same social good fellowship which has hitherto subsisted, and, in the words of our never to be forgotten founder, "may the Club live for ever."

The following is a statement of the income and expenditure of the Club during the past year:—

INCOME.		£	s.	d.
Arrears received		10	18	6
Subscriptions for 1864		73	2	0
„ 1865		0	8	0

84 8 6

EXPENDITURE.

Paid Balance and Accounts				
for 1863	£2	17	2	
Paid for Printing, Litho-				
graphy, &c., for 1864	90	6	0	

93 3 2

Balance due to the Secretary	8	14	8
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Since last year we have lost ten Members by death and resignation, and seventeen new members have been elected; the present number of Members is 224.

Notes of the Opening of Ancient British Tumuli in North Northumberland in 1863 and 1865. By the Rev. WILLIAM GREENWELL, M.A.

I PURPOSE, in this paper, to give an account of the opening of some tumuli, which I made during the years 1863 and 1865, in North Northumberland. Though many tumuli have been opened, and cists containing interments have been discovered, within the district over which the researches of our Club extend, we have had few systematic records of such discoveries printed, and in consequence, a great number of valuable facts, connected with the sepulchral usages of the early occupants of this country, have been, it is to be feared, for ever lost to us. This is a matter very much to be regretted, for we cannot again expect, now that so much of our waste land has been brought into cultivation, to have the opportunity, which a first ploughing gave us, of examining a large series of these places of burial. The necessity, therefore, for preserving accurate and detailed records of what does occur to us is a very pressing one, and one which, I trust, will not be neglected by any one of our members.

Before I give an account of those tumuli which I have examined myself,* I will briefly record a few notes of some interments which have been discovered in the parish of Ford; they will thus be preserved from being forgotten, and some facts, which may prove of service, will find a proper place in our Transactions.

There is no part of Northumberland which has produced more frequent instances of early interments than the parish of Ford, of which the greater number have been of burials after cremation. Possessing a large amount of good land, together with natural positions of considerable strength, and having a river well stored with fish running through it, the parish of Ford appears to have been early and extensively occupied. I have notes of a large quantity of interments, which in the course of ploughing, draining, and walling, have from time to time been discovered; unfortunately, in nearly all these cases no careful observations were made, and my information is therefore very vague. I possess also,

* See an Account of the opening of two Barrows, published in our Transactions, Vol. IV., 390. I may here mention, that I have since obtained from the second of the barrows there described, a very fine specimen of a flint javelin head, chipped over the whole surface; it is $2\frac{3}{8}$ inches long. This was found associated with one of the interments of burnt bodies deposited in the barrow, and it was placed in the stratum of burnt matter mentioned in the paper.

fragments of numerous sepulchral vessels of pottery which have been found associated with these burials; many of which, considered as British pottery, shew rare beauty of form and ornamentation, and are of types to which, in a very considerable experience, I have seen nothing similar.

From the centre of a small barrow upon Ford Common, which contained two other interments of burnt bodies without any accompaniment of urn, &c., was taken a rather rudely formed urn* filled with burnt bones. Close to the outside of the urn were four jet beads, three of a cylindrical form, the fourth shaped like a slightly conical button. In another instance, a necklace of jet beads, of varied form, was found strung round the neck of an urn; unfortunately, neither the urn nor beads have been preserved.† In another barrow at Broomridge, within a circular hollow sunk in the ground and lined with clay, an urn‡ was found, filled with burnt bones, whilst reversed upon the top of the bones was a smaller urn,|| acting as a cover, the bottom of it being upon a level with the natural surface of the ground. On the farm of Ford West Field, several burials of burnt bodies were discovered; they were placed in circular hollows sunk below the natural surface of the ground, and each covered with a flat stone, upon the under side of two of which were engraved the mysterious symbols which have been lately so well illustrated and described by our Secretary, Mr. Tate. The first place of interment which I examined in 1863, was situated in a field just east of Ford Common. It was placed upon the highest point of ground in the field, where a large flat stone, apparently not *in situ*, attracted attention. There was no

* The urn is $8\frac{1}{2}$ inches high, and $7\frac{1}{2}$ inches wide at the mouth, having an overhanging rim, ornamented with alternate series of horizontal and vertical lines of impressed twisted thong.

† This discovery was made upon a swelling piece of ground near Crookham Dene, where several circular hollows, each covered with a flat stone and filled with burnt bones, were found. In one instance, the hollow was lined with small stones, within which was the urn and necklace. There was no appearance of any tumulus having ever covered these burials, and, in fact, the rounded hill itself formed a natural tumulus.

‡ The urn is 9 inches high, and 7 inches wide at the mouth, having the upper half ornamented by lines of impressed twisted thong placed herring-bone fashion. It has the unusual peculiarity of a deep ($1\frac{1}{2}$ inch) ornamentation on the inside of the lip, formed by a diamond pattern between two encompassing lines, all of impressed twisted thong.

|| The smaller urn is 5 inches high, and $4\frac{3}{4}$ inches wide at the mouth, having the upper half ornamented by encompassing horizontal lines of impressed twisted thong, below which is a line of very short vertical lines, also of impressed twisted thong.

appearance of a tumulus, though such may once have existed and have been destroyed by long continued ploughing. On removing this stone, a cist appeared below it, formed of four stones set on edge, and filled with sand and gravel. Amongst this were dispersed the remains of the burnt body, together with some pieces of charcoal, one very small fragment of pottery, and a flint knife. The knife, for such I think it must be called, is most beautifully and minutely chipped over the whole of one surface, whilst the other, as is usual in the case of such implements, has been taken off from the core at one slice. It is $2\frac{1}{2}$ inches long and $\frac{7}{8}$ inch broad, tapering off at both ends to a rounded point, and is made of a very fine and transparent kind of flint—*Plate XIII., fig. 7.*

Upon October 17th, I opened a tumulus upon Etall Moor; it was 16 feet in diameter, and above $2\frac{1}{2}$ feet high, and was formed of earth with a few stones interspersed. It had been partially disturbed from the Ordnance Surveyors having selected it for the site of one of their surveying posts, to which was due the destruction of a very peculiar specimen of the so called “drinking cup” type of urn. This urn had been placed about a foot below the summit of the barrow, a little to the west of the centre, and had, without doubt, accompanied an unburnt body,* all traces of which had, however, disappeared. It is entirely covered with lines of impressions made by a circular ended piece of wood or bone, which divide the surface into squares—*Plate XIII., figs. 5 and 6.* Immediately east of this urn, and just above the natural surface of the ground, was found another standing upright, and which had both within it and around it burnt bones and charcoal; the remains of a body which had been interred after cremation. The urn is 8 inches high, and 6 inches wide at the mouth, having an overhanging rim, and is quite destitute of ornamentation. Directly below this and almost touching it, was a much larger and very well formed urn, placed, as were all the others to be mentioned presently, in a square hollow sunk below the natural surface of the ground. This urn—*fig. 1*—which stood upright, is 14 inches high, and 12 inches wide at the mouth, having an overhanging rim, which is ornamented by a zigzag line; the triangular spaces within which are filled with parallel lines, all made by the impression of a twisted thong. The urn contained the burnt

* This type of urn, the “drinking cup,” is universally found associated with unburnt bodies.

remains of a body, together with a small fragment of a bronze pin, much oxydised; there was also found just outside the urn and near the top of it, a portion of a bone pin, which had been burnt, and which possibly belonged to the interment with which the plain urn above described was associated. Placed between the side of the urn and a flat stone set on edge, and partly crushed by the pressure, was a small urn standing upright and quite empty. It is 7 inches high, and $4\frac{1}{2}$ inches wide at the mouth, having an overhanging rim, which is roughly ornamented in the same manner as the last urn, in addition to which it has, below the rim, short vertical lines of impressed thong. It cannot, I think, be doubted that this urn was connected with the larger one and its sepulchral contents, and that, in fact, the two formed the adjuncts of one burial; it is difficult, however, to conjecture what office the smaller urn fulfilled, though most probably, whatever was the reason which caused a small urn* to be placed amongst the burnt bones in a larger one, or in a cist, or amongst burnt bones placed simply in a tumulus, the same object was answered by the smaller urn in the present case. About six inches east of the flat stone was placed another urn, standing upright, but much crushed and broken by the pressure of the earth. It was filled with burnt bones, amongst which was placed a perfectly plain and rudely made urn of the "incense cup" type, $1\frac{3}{4}$ inches high, and 3 inches wide—*fig. 3*. The larger urn—*fig. 2*—is of coarse make and shape, $9\frac{1}{2}$ inches high, and 9 inches wide at the mouth, having an overhanging rim, which is roughly ornamented with alternate series of vertical and horizontal lines of impressed thong. A few inches north of this urn was another, so much decayed that only a few portions of it remained. The rim has a reticulate pattern of impressed thong, the urn below the rim being marked with scattered oval impressions. From the broken state of this and the last urn, and their close proximity, it is not possible to say whether two burnt bodies had accompanied the two urns or not, though such was most probably the case. As I have before stated, all these interments were placed in a hollow

* These urns are usually of the so called "incense cup" type, and are of small size and shaped generally, in the north of England, very much like a common earthenware salt cellar. They are very frequently pierced with two holes, placed close together, which have been supposed to be for the purpose of suspension; this, however, seems an improbable explanation of their use, for the holes are as commonly near the bottom as at the top.

sunk below the surface of the ground, and which had a rough covering of stones over it to protect them. Immediately east of this hollow was a cist, about $1\frac{1}{2}$ feet square, made of four stones set on edge, with a cover; this cist was filled with sand, amongst which were scattered burnt bones and charcoal, the remains of the body. A single chipping of unburnt flint was found amongst the materials of the tumulus, together with a kidney-shaped stone, which appears to have been used for rubbing down grain or for some similar purpose.

The contents of this tumulus present, as far as I know, the greatest assemblage of burnt bodies in one tumulus which has been discovered in Northumberland; and we shall not, perhaps, be wrong in regarding it as the burial place of a family, where we may suppose the upper plain urn, the cist, and the "drinking cup," to represent interments subsequent to those which were deposited in the central hollow. A question is suggested by the presence of a piece of bronze in the largest urn, which requires a few words in its examination. The absence of bronze has been usually supposed to mark interments of a date prior to the introduction of that metal, and this view has obtained greater acceptance, because in most cases, implements of flint are so common in barrow burials. I cannot, however, regard the absence of bronze and the presence of flint as giving much countenance to the idea that the people who raised the round barrows, were, at any time during their occupation of Britain, ignorant of the use of bronze. On the contrary, I believe that they were acquainted with that metal when they first occupied this country, and that the absence of bronze in their places of sepulture, is due, not to their ignorance of it, but to other causes. In this tumulus, in which certainly five, and most probably six bodies had been interred, only one very small fragment of bronze was found, of which a few years more exposure might have destroyed all trace; indeed, had this fragment been nearer the surface and more subject to atmospheric influences, it would have disappeared long before the tumulus was opened, when it might have been supposed that no metal had ever accompanied the interments. This complete decay of bronze has happened, I have no doubt, in many instances, and thus, at their opening, tumuli have shewn no trace of metal where it had once existed. But the absence of bronze is to be accounted for on other grounds than that of its decay. Those implements and weapons

which were commonly made of metal, it was not the usual habit to deposit with the dead, whilst such as were made of flint were the ordinary accompaniments of an interment. For instance, swords, spears, and celts, have very rarely, if ever, been found in a tumulus, now these are nearly always made of bronze; on the contrary, arrow heads and knives, of which we possess no examples in bronze, but innumerable ones in flint, are the commonest adjuncts to a buried body, burnt or unburnt. The articles of bronze which it was usual to inter with a body are daggers and pins, and such are not unfrequently found; but only certain persons would be buried with a dagger, and as a bone pin answered the same purpose as a bronze one, we may easily account for the absence of the more valuable material. We may thus, when we find no bronze with an interment, understand that such was not caused by the want of knowledge of that metal, but because, in that interment, no implement of metal was thought to be the proper one to be deposited with the body. The two materials, bronze and flint, were in use, I have no reason to doubt, for different purposes, all through the period which elapsed before the introduction of iron,* and it was the knowledge of that metal which did away with the use of flint. I have never observed any difference in the mode of burial in round barrows where only flint has been found, from that in those where bronze exists, nor do the urns or flint implements differ in the two cases; precisely the same kind of urn and the same shaped flint knife or arrow head is found in a barrow where a bronze dagger or pin occurs, and in an adjoining one where not a vestige of metal appears. I cannot, therefore, see any reason to suppose that some of the round barrows were made before bronze was known, whilst others are of a date after its introduction. The general absence of bronze is due, as I have before said, to the fact that the weapons and implements usually deposited with the dead were such as were not commonly made of that metal.

November 21st and 23rd were spent in an almost fruitless examination of some tumuli upon Whitsun Bank, in close

* I must be understood to speak of the period during which Britain was occupied by the race who buried in round barrows. There was an earlier period and a previous race who buried in long barrows, to which the use of bronze was unknown; and before that time and during an age when Britain had not assumed its present geographical features or existing fauna or climate, still earlier forms of man lived here, whose implements we find associated with the extinct mammals, but whose sepulchres have not, as yet, been discovered.

proximity to the remarkable camp opposite Weetwood, and to several series of circular-marked rocks. Though presenting no appearance of disturbance upon the surface, five of these tumuli were found to have been opened at some previous and probably distant period. One, made of sandy soil, which was 15 feet in diameter and $2\frac{1}{2}$ feet high, had in the centre a cist, which lay north-east and south-west, made of five stones set on edge, with two covers. It was filled with whitish sand, and had, probably, contained an unburnt body, as no trace of bone was visible, and burnt bone is almost indestructible. A second was 15 feet in diameter and 3 feet high, having a circle of stones round its base, and was made of stones and earth. In the centre was a cist, lying east and west, made of five stones with a cover, which had contained a burnt body, the remains of the calcined bones being scattered about. One tumulus, however, of very small size, proved to have been, hitherto, untouched. It was 8 feet in diameter and about 10 inches high, and was made of earth with a few stones upon the top. Just above the surface of the ground was a flat stone, and under it a second one, which formed the cover of a small cist, 14 inches square and 10 inches deep, sunk in the ground, and formed of four stones set on edge. The bottom of this cist was filled for 3 or 4 inches in depth with sand, and resting upon this was earth and small rolled pebbles, amongst which were the burnt bones of a body, and a flint arrow head, of the lozenge shaped form, and which had been burnt.

On November 26th, I examined several tumuli near the Kimmer Lough, in the parish of Eglingham; all of them had, however, been previously opened, and no results of any kind were obtained, except that one had contained a cist. The following day was spent opening what remained of a cairn, situated upon the north-east side of Harehope Hill. The cairn had been 20 feet in diameter, but I was unable to ascertain its height in consequence of the greater part having been removed. It had a circle of stones round the base. On reaching the original surface of the ground, we came upon a large slab of sandstone, which proved to be the cover of a very well made and regularly formed cist, lying north-east and south-west, and being 4 feet 6 inches long, 2 feet 9 inches wide, and the same in depth. The cist contained nothing except a few small fragments of charcoal, one minute piece of pottery, and a flint knife, rather coarsely formed—*fig. 4*. There was no appearance as if the cist had ever been opened

before, and I can scarcely think that it could have been examined without leaving some signs of disturbance. I therefore suppose that it had once contained an unburnt body, of which, as is so frequently the case, all trace had disappeared. The presence of charcoal may seem to indicate that the body had been burnt, but apart from the absence of any remains of burnt bones, this occurrence of charcoal, in itself, is no proof of an interment after cremation, for charcoal is found very frequently with burials where inhumation has evidently been practiced; it may, very possibly, be the remains of the fire at the funeral feast, an usual accompaniment of a burial.

Many tumuli still remain, more or less destroyed, on the moors near Bewick, and it may be well to notice one of them which presents a very remarkable, and, I believe, unique feature. The tumulus is one of ten or twelve cairns, which stand upon the top of the hill near the boundary stones between Bewick and Hebburn Moors. It contains two cists, one quite small, the other of the ordinary size, about 3 feet by 2 feet, and which once contained an unburnt body, and a "drinking cup," of which I possess a small portion. The peculiar feature connected with this cist is its cover, which shews evident marks of the tool, a pointed instrument. This sandstone flag is narrower at one end than at the other, and in order to facilitate the dragging it up the hill to the cairn, it has had two hollows cut into it, one on each side at the narrow end, thus forming a neck, round which a rope might be passed. With the exception of the circular markings upon the cover stones of places of interment, this is the only instance out of a great number that I have met with, where any of the stones composing a cist have shewn signs of having been tooled.

Besides the tumuli mentioned above, I opened two or three smaller mounds, of a kind of which I have before examined several, and always without any discovery of bones, pottery, metal, or flint. They are generally found in groups, and are small in size and of slight elevation, and have frequently associated with them, one or more of a larger size, which I have, hitherto, invariably found to have been previously opened. They are certainly artificial, and are sometimes very regularly constructed with stones overlapping from the centre. I believe them to have covered unburnt bodies, placed on the ground, without cist or any other protection, and where, in consequence of exposure to air and wet, all trace of the body has long ago disappeared; they are

probably, the sepultures of more humble persons than the larger tumuli which contain cists, urns, and implements.

On August 2nd and 3rd, I examined a place of sepulture at Blawearie, near Old Bewick. It is situated about half-a-mile north-east of the camp upon Bewick Hill, and consists of a circle of stones set on edge, in some places touching each other, in others standing apart. The circle is 36 feet in diameter, and contains within it a few ordinary field stones upon the surface, but not in a sufficient quantity to constitute a cairn. Some years ago, a cist had been discovered in the centre, in which was found an urn, since lost, nor can I recover any account sufficiently exact to determine the type. Nine feet six inches to the south-west of the centre, we came upon a cist, lying north-west by south-east. It is 3 feet 4 inches long, 1 foot 10 inches wide, and 1 foot 10 inches deep, made of four slabs with a cover, one of the side stones had a single stone placed upon it, and another had several, to make it up to the requisite height. At the bottom was about 4 inches of sand, amongst which and nearly covered by it, at the north corner, was an urn placed upon its side, with the mouth towards the centre of the cist. There was not a trace of the body—an unburnt one, no doubt—remaining, and nothing, beyond the urn, except a few pieces of charcoal. The urn is of the flower pot shape, $6\frac{1}{2}$ inches high and 6 inches wide at the mouth. It is entirely covered with limes placed herring bone fashion, made by a sharp ended implement, and is identical in shape, and ornamentation, with one found at Great Tosson, near Rothbury, with an unburnt body and an iron javelin head.* Three feet west of this cist was another, lying also north-west by south east. It is 2 feet 8 inches long, 2 feet 3 inches wide, and 1 foot 9 inches deep, and has only two side stones and a short one at the north-east end; the cover had been previously removed. At the bottom was about 6 inches of sand, amongst which, at the north corner, was a necklace of beads, of which above one hundred were found. Ten of these are cylindrical, the others being thin flat round plates of various sizes, and they had been arranged in series of ten round ones and then a long one, then ten round ones and so on. The long beads are from eleven-sixteenths to one inch long, the round ones from

* See Mr. Tate's Account of this Discovery in *Proc. of Soc. of Ant. of Scotland*, Vol. IV., p. 58, and a Description of the Skull, with a Plate of the Urn, &c., in *Cran. Brit.*, Pl. 54.

three-sixteenths to six-sixteenths of an inch in diameter. The cylindrical beads are jet, the round ones shale or some similar material; ten cylindrical and ninety-one round ones were found, but some of these last were no doubt overlooked amongst the sand. Near the middle of the cist, amongst the sand, was a flint knife or scraper, chipped carefully along both edges upon one side, the other being a clean slice from the core. It is $1\frac{3}{4}$ inches long and $\frac{3}{4}$ inch wide, and has had a piece at the end broken off. At a distance of 12 feet 8 inches from the centre, we found a third cist, lying north-east by south-west. It is 2 feet 4 inches long, 1 foot 5 inches wide, and 1 foot 5 inches deep, and was made of four stones, with a cover. There was about six inches of sand at the bottom, in which nothing except a few bits of charcoal was found. In this case, as in the other two cists, the body, in consequence of the cists lying so near the surface, had gone totally to decay.

The examination of this circle has further corroborated what many previous investigations of such structures has shewn, that they are sepulchral. Similar places of sepulture are frequent in Wiltshire, where the circle is made of a ring of earth. In most of the Wilts examples, the burial appears, from the associated articles, to have been that of a woman, and such apparently has in one of the Blawearie cists been the sex.

Before concluding, I will add a few words as to the probable date of these burials, and the people to whom they are to be attributed. It is impossible to give even an approximate date, but one thing is, I think, certain, that they belong to a time before the Roman occupation. There has never been found in these tumuli any pottery, weapons, or ornaments, which shew the slightest trace of Roman influence, a fact which is perfectly inconsistent with a post Roman date. Taking then for granted that they belong to a period before the Romans set foot in Britain, to what date may we carry them back? With our present evidence no satisfactory answer can be given, but I should hesitate very much in suggesting a later period than B.C. 1000, for the earliest of our round barrows. Iron was in use when Cæsar landed, and was so common for certain purposes, that we cannot view its introduction as having taken place but at some considerable distance from that time; but nearly all the tumuli are of a date before the use of iron, of which metal very few traces have been found in them,* and we are therefore obliged

* Iron has been found, as at Tosson, in cists with unburnt bodies and the later type of urns; but it seems scarcely possible, that in these cases, any tumulus

to carry back the latest of them to a period which dates many centuries before the time of Cæsar. This makes the date B.C. 1000 certainly not too early for the oldest of the round barrows, if, indeed, it is not very much within the age to which they may fairly be attributed. The question, however, is one which is beyond the limits of the present paper, and, indeed, I do not think that we are justified at present, from our want of facts and consequent imperfect knowledge, to come to any conclusion on this subject. From every barrow, however, which is opened and carefully examined and recorded, we learn something, and I do not despair of obtaining data sufficiently numerous and exact to form a chronological basis, which will approach in some measure at least to the truth. The same difficulty does not meet us as to the people whose dead these tumuli cover, and they may safely be ascribed to those tribes which occupied Britain, in its greatest part at least, when the Romans invaded the country, and who were of kindred origin and speech with many of the tribes of Gaul. As to the wider question, relative to the great family to which they belonged, I do not feel competent to enter upon it. Were they Keltæ? An answer must first be given to a primary question—What is the Keltic type? Now many difficulties, at present, stand in the way of an answer to this, which, until they are solved, make vain, it seems to me, all attempts at a solution of the secondary question. Merely to allude, in conclusion, to one difficulty. The skull, from the round barrows, is eminently brachycephalic; the skull of the modern Irishman or Scotch highlander, whom we commonly term “Celts,” is *not* brachycephalic, and the skull, like a race, never essentially alters—its features are unchangeable.

ever covered the cists, a feature which I regard as indicative of the latest period of pre-Roman times. A group of small barrows near Market Weighton in the East Riding, contained iron objects, together with bronze articles, which shewed them to be of the later so called “Celtic” period.

PLATE XIII.

- Fig.* 1. Urn, half size, Etall Moor.
 „ 2. Urn, quarter size, Etall Moor.
 „ 3. Urn, half size, Etall Moor.
 „ 4. Flint Knife, full size, Harehope Hill.
 „ 5. Fragment of Urn, half size, Etall Moor.
 „ 6. Do. do., full size, do.
 „ 7. Flint Knife, full size, Ford Common.

Additions to the Muscology of the Border. By ARCHIBALD JERDON, Jedfoot House, Jedburgh.

THE following mosses, not enumerated by Dr. Johnston in his "Natural History of the Eastern Borders," have lately been found by me in this district, and should, I think, be recorded in our annals, particularly as the Club now extends its Meetings to Roxburghshire.

Sphagnum compactum. Common on wet moors, but generally barren.

Sphagnum molluscum. Not uncommon on wet moors. Fruits in summer.

Weissia cirrata. On the roof of a thatched cottage in Roxburgh village, in abundance.

Dicranum majus. A good sized patch of this species was found in Lintalee Glen, but not in fruit.

Didymodon rubellus. I gathered a small patch of this among stones by the side of the Jed last spring.

Cinclidotus riparius, β , *terrestris*. A single patch of this species on a stone by the side of a wet ditch, without fruit.

Encalypta streptocarpa. Growing in some abundance on rocks by the side of the Oxnam, near Crailing, but not in fruit.*

Bryum crudum. In wet spots in woods and on hedge banks. Not common. A beautiful moss, of a delicate pale glaucous green. In fruit on a wet bank, in a wood by the Jed about 3 miles above Jedburgh.

Bryum pallens. Wet places and springs on moors. Not uncommon.

Bryum uliginosum. Wet places near rivers and in small ditches on moors. Not uncommon, but generally barren. Very fine, and in fruit on a wet face of rock near Old Cambus, Berwickshire. A large and fine species.

Mnium affine. Bogs, wet places in woods, &c. Not uncommon, but seldom found in fruit.

Leucodon sciuroides. A single patch on an elm tree by the side of the Jed above Jedburgh. Barren. This moss, so common in the south of England, is rare in Scotland.

Hypnum glareosum (Bruch.). On rocks by the banks of the Oxnam, near Crailing. Rare, and not in fruit.

Hypnum exannulatum (Gümb.). In wet ditches on moor between Jedburgh and Timpendean. Rare, and barren. This moss was named for me by Mr. Wilson, the author of "Bryologia Britannica."

* I have had some difficulty in determining the two latter mosses, but, having obtained the opinion of a good botanist, corroborating my own, I have no hesitation in enumerating them in this list.

Hypnum crista-castrensis. One or two patches in an old fir wood near Tudhope, Jedburgh. This beautiful moss is rare in the Lowlands, though comparatively common in the Highlands.

Hypnum ochraceum. Wet spots on rocks by the side of the burn in Henhole.

Hypnum sylvaticum. Dry banks in woods, about the roots of trees.*

Omalia trichomanoides. On trunks of trees in moist woods. Not uncommon. A pretty moss, remarkable for its obtuse glossy leaves.

Neckera crispa. On rocks by the sea shore near Coldingham Loch. June, 1865. I gathered specimens of this moss on the day the Club met at Ayton this year. Mr. Hardy informed me that it had not been found in Berwickshire before. The specimens were rather small, but there was no doubt of the plant.

Fontinalis squamosa. In the burn in Henhole, in some abundance.

* The upright mountain form of *H. denticulatum* occurs on wet rocks in Henshole.

The Monastery of St. Ebba. The Priory of Coldingham.

By JOHN STUART, F.S.A., Edinburgh.

STANDING on the magnificent cliffs on which the primitive establishment of St. Ebba was perched, it is hardly possible to resist a backward glance at its early history and singular vicissitudes.

Whatever may have been the cause which drew the royal lady to seek refuge on this isolated spot, there is no doubt that she here presided over a monastic establishment, composed of a nunnery for women and a monastery for men, before the middle of the seventh century. The headland on which it was built, fortified by nature on three sides, was cut off from the adjoining country by a trench and wall, and was thus a place of defence, in which respect its position resembled that of many contemporary monasteries, which were placed on islands, such as Lindisfarne and Iona, or in situations naturally difficult of access and strengthened by art. The Monastery of St. Columba, at Iona, consisted of separate huts of hurdle work for the monks, with an adjoining church, all enclosed by a circular wall or cashel; and many of the Irish monasteries were erected within the raths

which covered the tops of so many hills of the Green Island, or were surrounded by walls of strength.

We know that Finan, the successor of Aidan in the See of Northumbria, erected his church at Lindisfarne of wood, after the fashion of the Scots, and that the illustrious Cuthbert's establishment on the Island of Farne, consisted of an oratory and house, the walls of which were formed of rough stones and earth, roofed with shingles, the whole being surrounded by a circular wall.

There seems much reason to believe, that the impulse which led to the foundation of St. Ebba's Monastery, on the lonely cliffs which have ever since been known by her name, as to that of the kindred institution founded by St. Hilda on the "Island of the Hart," arose out of that devotional fire which attended the labours of the Scottish missionaries, whose influence in the days of Finan (from whom, according to the tradition of the Scottish Church, Ebba received the veil,) extended in a greater or less degree over all the English provinces from the Forth to the Thames.

We may well believe that the buildings of Ebba's Monastery partook also of the style of her Scottish friends, and that like the Monastery of St. Columba at Iona, or St. Gall on the banks of the Steinach, or St. Columbanus at Luxieu and Bobbio, it consisted of separate "*mansiunculæ per gyrum dispositæ*," probably of turf or wood, covered with reeds.* Accordingly, an account of the foundation of St. Ebba's Monastery quoted by Dugdale from a manuscript in the Bodleian, states—"In Coludi enim monasterio, virorum et virginum congregationi beata Ebba præfuit; et contigua utrique ibidem habebant habitacula."† They are called "*domunculæ*" by Bede, when he comes to tell how the houses erected for prayer or study, had been turned into places of gluttony, drunkenness, story-telling, and other unbecoming practices.‡

But humble as these little cells must have been, the monastery would seem for a time to have been an active agent in quickening the religious life of the country of Northumbria. It sheltered Ethelreda, a daughter of the East Saxon kings, who became the unwilling wife of Ecgrith, of Northumbria; and it was the resort of men like the monk Adamnan, who,

* The first monastery at the mouth of the South Tyne was of wood. Leland records—"S. Oswaldus Monasterium de Tinemuthe ex ligneo lapideum fecit," Collectanea, Vol. IV., p. 43.

† Dugdale's Monasticon, Vol. VI., p. 1149.

‡ Hist. Ecc., Lib. V., cap. 25.

as we learn from Bede, came from Ireland for a life of strictness and devotion, which could then be ill attained except amid the seclusion of a monastic retreat.

Bede has preserved to us the notice of a visit paid to the Monastery of St. Ebba by the illustrious Cuthbert, which alone must give an interest to the spot associated with such an event. The great missionary then presided over the Monastery of Melrose, and in consequence of a wish expressed by St. Ebba, that he would visit her establishment at Coldingham, and enlighten its inmates by his exhortations, he proceeded thither, where he remained several days.* On this occasion St. Cuthbert is said to have performed his nocturnal offices in the sea, a form of penance adopted by many saints of the time, although few of them perhaps were favoured with the attendance of the sea calves, or seals who, after he came out of the water, began to chafe the saint's feet and dry them with their manes.

It may have been on this occasion that St. Ebba presented to her visitor a piece of cloth. At all events, the gift was so regarded by St. Cuthbert, that the cloth was preserved, and used as one of those in which his body was swathed; and seven centuries after his death, we find among the precious relics at Durham, "a particle of the cloth which St. Ebba gave to St. Cuthbert, in which he lay for 418 years and 5 months."†

If this fragment be the same as the one of which Reginald has preserved a curious history, it must have commended itself to the regards of the devout with double authority. According to this legend, Hugh Pudsey, the Bishop of Durham, when about to repair his castle at Norham, employed as architect, a man who had obtained from a monk at Durham a fragment of Cuthbert's winding sheet. It so happened, that the casket in which this relic was carried, being lost by the architect at Berwick, was found by a French clerk, who wondered to find a relic so mean in appearance in a casket so fine. When among some jovial companions he produced his discovery, and threw the bit of cloth into the fire, but after being in the flames for two hours, it was rescued from them unconsumed, and appeared to be brighter than that of which it was a part, as Reginald testifies from his own observation.‡ It is more probable, however, that the winding sheet here referred to, was formed of the fine linen sent

* Vita S. Cudberti, cap. x.

† Raine's St. Cuthbert, p. 123.

‡ Reginaldi Monach. Dunelm. Libell. cap. 47-54.

to St. Cuthbert, by Verca, Abbess of South Tiningham. "I declined to use it while living," said the saint, "but out of affection for that woman, beloved of God, who sent it to me, I have caused it to be reserved for wrapping round my corpse." This was said by St. Cuthbert when dying, and the cloth was found in the stone coffin or sarcophagus which had been given to him by the venerable Abbot Cudda.*

I think, however, we may infer, that the operations necessary in the preparation of linen and cloth, formed part of the duties of the inmates of the Saxon nunneries, as we have instances of two gifts of such substances made to St. Cuthbert by the Abbesses of Coldingham and Tiningham; and I may add as a fact tending in the same way, that among the complaints soon made against some of the practices of St. Ebba's nuns, one was that they gave themselves to the weaving of fine garments, with which they adorned their persons like brides, or as if to covet the society of men from without, to the peril of their own state.†

St. Ebba's Monastery was consumed by fire in 679, and a second monastery which, according to Wendover, was presided over by another Ebba, was ruined by the Danes about a century afterwards.‡

It is probable that St. Ebba was buried in the church of her own monastery.§ Her remains were undisturbed till the early part of the eleventh century, when Alfred Westoue, a monk of Durham, being commanded in a vision to visit the ancient monasteries and churches of Northumbria, and collect the bones of saints, paid a visit to Melrose, where he obtained the remains of Boisil, the instructor of St. Cuthbert; to Tiningham, where he secured those of Balther, the hermit; and to the burial place of St. Ebba, where he secured, at least, one of the feet of the abbess, as that member of hers appears among the relics at Durham, long after this time.||

It is probable that as in the case of Melrose, the early foundation was now ruined and continued deserted, although

* Vita S. Cuthbert., Auct. Ven. Beda., cap. xxxvii., s. 60.

† Beda. Hist. Eccl., Lib. IV., cap. 25.

‡ Simeon Dunelm. de Dunelm. Eccl., col. 32.

§ In the early traditions of the Scotch Church, it is said that St. Ebba was buried within her monastery, and that by the carelessness of the people, her tomb went to decay, and for many years the place of her burial remained unknown, till at last it was discovered by some shepherds. Her tomb was then opened by the Prior and Monks of Coldingham, when the linen in which the body of the saint had been wound was found undecayed. Her remains were then translated to the priory with great rejoicings of the people.

|| Raine's S. Cuthbert, p. 121.

the sanctity of the spot, doubtless, suggested it to Edgar as a site for his new foundation in the end of the eleventh century. As at Melrose, so at Coldingham, the new building was erected at a little distance from the earlier foundation; but the memory of the abbess is preserved in association with Saint Mary and St. Cuthbert.

The resemblance to the history of Melrose, is continued in the fact that a middle-age chapel was erected on the site of St. Ebba's Monastery, as occurred at Old Melrose—while both chapels were dependent on the new establishments.

Mr. Langlands in his instructive anniversary address delivered to the Members in 1859, has described the ecclesiastical remains on two of the hills constituting Abb's Point, viz. :—the Kirk Hill and the Headland. Those on the Headland are popularly known as St. Ebba's Monastery. It appears, however, that the ruins in both cases are the remains of two chapels, both about the same size, being 72 feet in length by 21 and 22 in breadth, with chancels of a square form at the south-east corners of the nave, of about 12 feet in breadth by $8\frac{1}{2}$ feet long. To the west of the church on the Headland, are obscure remains of other buildings, while on the Kirk Hill the boundary of a small cemetery is visible, in the centre of which the chapel stood. The platform on which the ruins on the Headland stand, is united to the mainland by a narrow neck. The access from the land side was guarded by a deep trench and strong wall across the neck, so that the space within was impregnable. In the Investitures of the lands, of which this is a part, it is described as the "Promontory of Abbsbrugh"—a name suggestive of its use as a fortified site, in which respect, as I have remarked, it would resemble the sites of many other early monasteries.

The chapel on the Kirk Hill, has continued to the present time to be called "St. Abb's Kirk;" and Carr, the local historian of Coldingham Priory, who wrote about thirty years ago, says that "the walls of this chapel and a small Saxon arch were to be seen, till within these few years."

It may be impossible to fix the precise date of this chapel, but there are some statements in early records connected with it which may help us to form an opinion.

We learn from the account of the translation of St. Ebba's remains from her own Monastery to the Priory, preserved in the Breviary of Aberbeeu, that her oratory or chapel had become almost obliterated. Soon after this event, a man of the name of Henry, was warned in a vision by a virgin of

venerable aspect, to build an oratory to her on the site of the former one. He for a time neglected the warning, but at last obeyed, and erected an oratory—of poor materials, indeed, but illustrious by reason of the frequent miracles performed at it. One of these was the cure of a young woman, the daughter of Merlin,* who having become blind of an eye, and having lost the hearing of one of her ears for fifteen days, was brought to St. Ebba's Oratory to be cured. During her vigils over night, a white dove came to rest on the altar, which immediately restored her power of speech, and freed her from all her infirmities. We learn farther, that all this happened in the year 1088.†

If the arch described as *Saxon* by Dr. Carr, is to be regarded as having been a Norman one, it might possibly be a relic of the building constructed at this time. I am inclined, however, to believe that by the term *Saxon arch*, Carr merely intended to describe the arch of a window or doorway which might have been either circular or pointed, and that in either case it would be unsafe to infer from the form, without reference to the mouldings, an extreme age, as the circular arch is found in Scottish architecture of all orders, and it does not appear that the building of Henry had any pretence to architectural character.

We have more authentic evidence of the erection or restoration of a Chapel of St. Abb towards the end of the fourteenth century. In the accounts of the Sacristan of Coldingham for the year 1372, he takes credit for a payment of twenty shillings made by him to the fabric of the Chapel of St. Ebba; and in the account of the following year for a payment of seventy three shillings and twopence in the construction of the Chapel of St. Ebba, besides the donations and oblations made for the Chapel.

In the year 1413, he debits himself with two shillings and threepence received from the Pix of St. Ebba.

It is most likely that the ruins described by Dr. Carr are to be referred to the Church of the fourteenth century.

The Legend of St. Ebba in the Breviary of Aberdeen, from which I have already quoted, states that on the Headland where the Virgin's Oratory was erected, a pleasant spring

* Merlin was not an uncommon name in the neighbourhood in these early times. In a charter granted to St. Cuthbert, St. Ebba, and the Prior of Coldingham in the year 1250, of a toft in Upper Ayton, we find a notice of Maurice, the son of Merlin. North Durham, Appendix, p. 48.

† Breviar. Aberd., Pars. Estiv., fol. lxxxvii.

sprung up which yet continued to flow, (that is in the beginning of the sixteenth century when the Breviary was constructed).

In a charter of a toft in the town of Ayton, dated about 1250, reference is made to eight acres of land in the plain between the Well of St. Ebba and Littledene;* and part of the Barony of Ayton is still called "St. Ebb's Well" in the Investitures of the lands—where St. Ebb's Mill also appears. In an ancient Rental of the Priory, Roger is entered as possessing a croft and two acres, and is described as "homo Sanctœ Ebbœ." Did this imply that there had been a territory in connection with the early foundation?

When Edgar, the King of the Scots, resolved to found a Priory at Coldingham, we may reasonably believe that its site was partly suggested by recollections of the earlier foundation of St. Ebba, while in choosing to subject the new establishment to the Monks of Durham, he may have been led by the conjoined motives of reverence for St. Cuthbert and affection for Turgot, the confessor of his saintly mother, and his own early friend, then Prior of Durham.

According to Wyntonn:—

"Coldyngame than fowndyd he,
And rychely gert it dowyt be,
Of Saynt Eb a swet Halow,
Saint Cuthbert thare thai honowre now."

The country of Lothian in which the Priory was placed had till lately been under the dominion of his mother's people—the Saxons; and among the precious relics of the new foundation were those of St. Margaret,† the Saxon Princess.

Lothian was an early settlement of the Saxon people. Under the name of "Saxonia" it was frequently invaded by the Celtic races who were settled on the north of the Forth. Thus the Chronicle of the Picts records that Kenneth, the son of Alpin, who lived about the middle of the ninth century, six times invaded "Saxonia," burning Dunbar and taking possession of Melros.‡

There are facts from which it may be inferred that the country had not been fully settled and peopled by the Angles. Thus, among the lands bestowed by the munificence of the

* Breviar. Aberd., Pars. Estio., fol. lxxxvii. North Durham, App., p. 48.

† Raine's Coldingham, Appendix, p. 103.

‡ Pinkerton's Inquiry, Vol. I., p. 494.

Northumbrian Princes on the Bishopric and Monastery of Lindisfarne, was the territory of St. Balther's Monastery at Tynningham, running from the Lammermoor Hills to Eskmouth, and comprehending the present county of Haddington. Another territory similarly dedicated was on the Eder, besides a tract of country on the south of the Tweed, stretching from that river nearly to Bamburgh, and in an inland direction to the valley of the Breamish and the Till. With regard to such districts, we may infer that they were as yet unappropriated to the private uses of individuals, but were in the state of folk-land. We have other evidence of the recent reclamation from a state of nature of a district on the Tweed in the Time of Edgar. Thus *Thor the Long*, in granting to St. Cuthbert the Church of Edenham, narrates how he received from Edgar, the King, Ednam, then a waste; how at his own charges and by his own industry he brought it into cultivation and settled it; how he built a church in honour of St. Cuthbert and endowed it with a carrucate of land. The district thus reclaimed soon came to be known as the Parish of Edenham, or as it is now called Ednam. Among the possessions of Lindisfarne were the two Geddwrds or Jedworths, which the Bishop Egred, who lived before the middle of the ninth century, had settled (*condidit*).*

On the marches of this country of Lothian—a country different from Scotland in its settlement, its institutions, and its topography—did Edgar found his Priory. The very tenure by which this country was in his hands, differed essentially from that by which he held his own country of the Scots. If we can credit a somewhat doubtful charter of his, printed from an early copy, by Dr. Raine, Edgar asserts that he holds the country of Lothian by the gift of his Lord William, King of the Angles, while the land of the Scots belonged to him of hereditary right. It is at least certain, that Edgar's charters were confirmed by King William Rufus, who alleges in his Deeds of Confirmation, that Edgar made his grants with his consent (*me concedente*).†

The Church of Coldingham was dedicated to St. Mary. The King came to the Festival of the Dedication, when he gave to St. Cuthbert the lands of Swintun by gift on the altar.‡ In other deeds, St. Cuthbert and St. Ebba are associated with St. Mary.§ The Priory was speedily enriched by

* Sim. Dunelm. ap. Monum., Hist. Brit. p. 675.

† North Durham. App., p. 2.

‡ Raine's North Durham, App., p. 79.

§ Ib., App., pp. 2, 23.

grants of lands and churches from the kings and great men of Scotland, the evidences of which will be found in the Appendix to Dr. Raine's admirable History of North Durham.*

Dr. Raine in a volume printed for the Surtees Society has furnished us with the Correspondence, Inventories, Account Rolls, and Law Proceedings of the Priory. From the materials thus preserved, many curious glimpses may be obtained of the early condition of the country, its agricultural tenures and progress, the relations between different classes of society, and the working of the monastic system in its domestic aspect, as well as in its more public dealings with the world around.

The position of the Priory of Coldingham was one of delicacy and difficulty. It was a house of Scotch foundation, dependent on another establishment, in a country often at war with Scotland, but yet under the spiritual jurisdiction of the Bishop of St. Andrews. This was a circumstance which strongly affected its subsequent history. It led the Monks to obtain letters of protection both from the Scottish and English kings, but it exposed them to many dangers and difficulties which required their continual vigilance and greatest efforts to avert and overcome.†

At an early period, Anthony Bek, the warlike Bishop of Durham, got the Pope to confer the Priory on the Bishop of Biblis, who was in want of an endowment, but this grant was frustrated, more through the English Parliament than the reclamations of the Monks. At another time, the Priory was claimed by the Monks of Dunfermline, but the claim was rejected by the Scottish estates. Then in the time of the Papal Schism, the Scotch King presented a monk of his own country as Prior, pretending the authority of Clement, the Anti-Pope; and this gave much trouble for a time. At another time, the Prior was troubled at a rumour that the Bishop of St. Andrew's had gone to Rome to obtain Coldingham *in commendam*, or to have it erected into the seat of a suffragan bishop.‡

The many difficulties which surrounded them could not be warded off by their charters of protection, and the Monks were induced to seek for aid of a more practical kind.

* *Ib.*, App., p. 29.

† Coldingham, p. 168.

‡ The dangers came from both sides of the border. Thus in the accounts for 1400, there is entered for the teind sheaves of Coldingham, "*nihil quia fuerunt vastæ et destructæ per Scotos, et inimicos Angliæ.*"

In the year 1371, William, Earl of Douglas, the Justiciary South of the Forth, was prevented from holding his Justice Air at Berwick, as that town was in the hands of the English. He accordingly held it at the Priory of Coldingham, which he was induced to select, from the extent of its accommodation, and the bountifulness of its hospitality; but he granted a charter to the Monks, setting forth the necessity which had compelled him to come to their house, lest any claim of right to similar entertainment might hereafter be set up against them*

It is not unlikely, that some tie of interest between the Priory and the great house of Douglas may have arisen out of this accidental transaction. At all events, the Monks put themselves under the protection of Archibald, the fourth Earl of Douglas, giving him an early pension of £100 for his services. In the year 1406, the Earl, as "Kepar to the Landis and the Rentis of the Priorie of Coldinghame," constituted Sir Alexander Home, of Dunglass, to be his substitute and keeper under him, with a salary of twenty pounds.†

In 1437, Sir David Home, of Wedderburn, was appointed Baillie of Coldingham for five years. Next year, however, he represented to the Prior of Durham how he "had ben lang tyme servand to Saynt Cudbart and you," and requesting that his appointment should be for life, and his "pencion sumthyng amendit." The Prior agreed to increase the salary, but not to prolong the period of Sir David's commission. The Knight returned to the charge, and several other letters passed between him and the Monks. In 1441, Sir David was appointed Baillie for forty years, but a misunderstanding arose between him and his cousin, Alexander Home, the knight of Dunglass, who also wanted to be Baillie, and was appointed to the office for sixty years, on Sir David's resignation. Sir David thought that the Prior of Coldingham was a partizan of Sir Alexander's, and among other things he wrote to the Prior of Durham that the Prior of Coldingham "on this Sondag in sklandyng of me, he passit to Sant Ebbis, and gert his brether and the parys-prest pae witht hym, and wald lat na mese be said, na service done to the parishyne within the Kyrk of Coldyngham, and I was not content thereof and com to Coldyngham the sam Sondag, lat at evyne." The Prior seemed to know what might result from

* Raine's North Durham, App., p. 34.

† Coldingham, p. 109.

such a visit, so he fled from the Priory, and took all the brethren with him. In 1456, Alexander Home, son of Sir Alexander, was constituted hereditary Baillie. The new Baillie soon compelled the Prior and Brethren of Coldingham to flee, and intruded into the Priory two of his own kinsmen without lawful authority. This led to legal proceedings in the Papal Court at Rome, in the course of which, some curious incidents occurred. In 1465, an edict from the Roman Court was to be executed against Patrick and John Hume, the intruders at Coldingham; but the officer did not venture nearer than the Parish Church of Norham, because "I dar nought take uppon me for fere of deth to seke thair persons, ne yitt to accede unto thair habitacions and duelling places." Two years afterwards, the Homes were excommunicated, and the sentence denounced at the Parish Church of Norham, on the Feast of the Translation of St. Cuthbert, in the audience of the Homes and others of both nations, to a great number gathered together, according to ancient custom, for holding a public market at this time.

The difficulties attending a suit conducted at such a distance are well illustrated by what happened in this cause. Agents had to be sent from this country, with powers to fee counsel. Sometimes the agents were not very satisfactory in their accounts of the money furnished to them, and a fresh one had to be appointed. In this way, a procuratory was at times granted to certain agents, and at the same time a procuratory revoking the first, "*si necesse fuerit*."* Nothing could go on without money, and that, sometimes, was not easily got. Then there are references to bad banks at Rome,† in all which respects, the times seem to have been wonderfully like our own. Towards the end of this long plea with the Homes, the Prior of Durham wrote to his correspondent at Rome in regard to the application of certain monies, in a way which looks as if a part of the sum was to find its way into the hands of the Holy Father himself. The words are "*pro finali processu contra Patricium Home et Johannem Home in dicta curia habenda, volo el opto xxxvi ducatos pro satisfactione domino nostro Papæ, et ceteris sui sacri palatii ministris, inde ut dixistis, fienda, de debitis nostris per vestram industriam levandis, si et quatenus recuperari poterunt primo capiatis*."‡

The grasp which the Homes laid on Coldingham was

* P. 192.

† P. 228.

‡ P. 219.

never finally relaxed ; although, for a time, the Priory was annexed by James III. to his new Chapel Royal at Stirling, and afterwards, in 1509, to the Crown. It was at the same time withdrawn from Durham and annexed to Dunfermline ; but the dissolved Priory of Coldingham found its way back to the Homes, by a grant to Alexander, the sixth Lord Home, in 1592.

The position of the Monastery led the Monks to make many presents for the sake of protection and peace to their neighbours, and those who could help them. In the account for 1343, £41 16s. 8d. are entered as payments in money, horses, cloths, silks, woollens, and jewels, bought and given to the King of Scotland, the Earl of March, and others.* In 1364, 17s. 6d. were paid for a pair of bottles to the Earl of March, to the gate-keepers of Berwick, and in various other gifts, as well to the English as the Scotch.† Next year, the Earl got a pair of knives,‡ and in 1366, a sum is entered for three salted lampreys given to the great Earl,§ who, in the year 1373, did not disdain to borrow ten pounds from the Monks.|| In 1355, there is a payment made to their students at Oxford,¶ and this occurs under many other years with other benevolences. A contribution of twenty shillings to the King of Scots appears frequently, and in 1373, there is an entry for robes, with a contribution to the King of Scots, and the purchase of tables of waynscot, £45 19s. 0d.** In 1400, £10 12s. 8d. were paid for wine to the Bishop of St. Andrews when he was at Coldingham, and for presents to him and his officers.

In 1352, the Prior contributed for the repairs of the Church of Berwick. In 1355, the Church of Coldingham was under repair, and many minute payments were made on this account. In 1364, the Monks paid the expense of a mason brought from Durham, and of others from Jedburgh to inspect their Church. This year they paid for sending their Sacrist to Berwick and to other parts of Scotland for the purpose of selling their tithes,†† which when paid in kind, as rents of land for the most part were, must have accumulated on their hands. In 1371, they paid 40s. for painting an image of the Blessed Virgin in the Church of Coldingham.‡‡ In 1372, we find a purchase of parchment and paper.§§ In 1374, we find an inventory of the furniture of the chamber, in which

* P. xvi. † P. xlv. ‡ P. xlviii. § P. 1 || P. lxxiii.
¶ P. xxx., li., lvii. ** P. lxxviii. †† P. xlv. ‡‡ P. lxiv. §§ P. lxxvii.

chests and bouffettis of Flanders work appear,* and in the kitchen, a pair of quernes for mustard.† In 1446, occurs a list of vessels and books for the Church, among which is a book containing the Proverbs of Solomon with prologue, the Text of the Book of Canticles, the Prophecies of Merlin, and many other treatises in the same volume.‡

In 1370, a payment is made of 18s. 10d. for the purchase of an image for the Resurrection, another image of St. Blase, with other works of the painter.§

The tenure by which the bondager held his lands may be gathered from these Rolls. Every one who had a carrucate of land, had to perform stated services of sowing, harrowing, reaping, and the like. Under Simon, the first Prior, there is an early example of the manumission of a bondager, who, in time coming, was to hold his land free of all such services, for which he was to pay a fixed yearly sum, with a fixed sum for his forfeiture, marchet, and heriot.

It appears from the Rolls, that the ploughland was not always of the same extent. In Upper Ayton, the carrucate contained 8 oxgates of 13 acres each. In Lower Ayton, 14 acres went to an oxgate, of which 8 still made a ploughland. In Edenham, 10 acres made an oxgate. In Swynton, some of the oxgates contained $13\frac{1}{2}$ acres, and others $11\frac{1}{2}$ acres.

In 1354, the wages of a servant (unius famuli) was 16s. per annum, with a robe.

In a deed relating to the excambion of part of Oldcambus for part of Coldingham,|| witnessed by Patrick, Earl of Dunbar, reference is made to ten acres of ground in Coldingham under culture of flowers, as part of the consideration.

It does not appear that any part of the Church dedicated in the time of Edgar now remains. The architectural style of the existing building proves it to be of a later date. The style is that of the transition from Romanesque to Early English, showing it to have been erected towards the end of the twelfth century.

* P. lxxv.

† P. lxxvi.

‡ P. lxxxiii.

§ P. lxi.

|| North Durham, App., p. 100. Ib., p. 41.

Miscellanea Zoologica et Botanica.

By R. EMBLETON, Surgeon.

DELPHINIUM AJACIS; Branching Larkspur. A single specimen was collected in a field at Tuggall.

MUSTELA MARTES; Pine Martin. This is one of the rarest of the weasel tribe; and I cannot ascertain whether it

has ever been captured within the limits of the Club before. The specimen now in my possession, was taken in a rabbit trap on South Charlton Moor, and was kindly presented to me by my friend, John Fawcus, Esq.

COLUMBA TURTUR; Turtle Dove. A very fine specimen was sent me; shot on the Longstone, Farne Islands.

URIA GRYLLE; Black Guillemot. A mature specimen, and an immature one, I obtained on the Farne Islands in the last week of September.

ACHERONTIA ATROPOS; Death's Head Moth. The caterpillar of this fine moth has appeared in immense numbers, in this locality, this year. I have had, at least, a dozen sent me, and one perfect insect. I have several in the chrysalis state, and some still feeding. The Red Admiral and Painted Lady Butterflies have been very numerous; and the ravages of the caterpillars of the common white species, tell, too truly, how numerous they have been.

Notice of a Heronry on the Farm of Swindean, in Bowmont Water. By JOHN ROBSON SCOTT, M.D.

It may be interesting to lovers of ornithology to know, that that shy and retiring bird, the Heron, breeds in this district. There is a heronry, consisting of from fifteen to twenty nests, on a clump of ancient alder trees in a narrow valley between two secluded hills on the farm of Swindean, belonging to His Grace the Duke of Roxburgh. The alder trees are evidently a relic of the primeval woods, which, at a long distant period covered the low and moist ground amongst the hills, and of which a few remains are still to be met with, consisting of alders and mountain ashes.

It is worthy of remark, that the present abode of the Herons is not their original one. About one hundred years since, they frequented some large Scotch firs near the farm house at Belford, from which they were subsequently dispossessed by a colony of rooks; they then proceeded to settle themselves on some alders on the farm of Cahoust, distant about a mile and a half from their late abode, where they remained for a good many years. At length, the rooks increasing in numbers, again expelled the Herons from their trees, who eventually took refuge in their present settlement, where it is to be hoped they may not be further molested by their rather aggressive enemies. The last emigration took place about thirty years ago.

Geological Observations on Abb's Head, made at the Meeting there, in June, 1865. By D. MILNE HOME, Esq.

MR. MILNE HOME called attention to a spot near the New Lighthouse, where the hard felspathic rocks had been ground down, as well as smoothed and rutted. A thin covering of boulder clay had protected and preserved these smoothed rocks from the influence of the weather, so that when the clay was removed, and the rocky surfaces were washed, innumerable ruts and striæ were discernible. The direction of these was generally from about due North by compass, with occasional variations of a few degrees on each side. The boulder clay had interspersed through it rounded pebbles of hard rocks, which, if pressed heavily and moved over the smoothed rocky surfaces, seemed capable of having produced the ruts and striæ. The agent which had ground and smoothed the rocks appeared to have moved from a northerly direction, as the smoothed parts chiefly faced the north, the rough or lee sides facing the south.

These smoothed rocks did not everywhere present surfaces uniformly flat. They were in some places hollowed out, to the depth of two or three inches—the hollows being elongated—also in a north and south direction; and the sides of the hollows being also smoothed.

These elongated hollows seemed to countenance the idea that water, rather than ice, must have acted in their formation.

The area occupied by these smoothed rocks, in so far as exposed, was about 100 feet in length by about 50 in breadth. It is situated about 20 yards from the precipice overhanging the sea, and is about 200 feet above the sea level.

To the west and north-west the hills are highest, being about 500 feet above the sea, and distant one mile. They are, however, separated from the promontory of St. Abb's by a deep valley, running north and south, which would prevent any flow of ice from these hills to the smoothed rocks.

The party proceeded next to the Kirk Hill, distant about half-a-mile to the S.S.W. of the Lighthouse, where Mr. M. H. pointed out a bed of stratified gravel, on the N.W. side of the hill. In this gravel bed, a boulder of greywacke was observed, on the west side of which were horizontal striæ. This gravel bed is about 200 feet above the sea.

Mr. Milne Home mentioned that on the west side of the valley which separates St. Abb's Head from the mainland, and near its south end, he had, some time ago, found a bed of gravel, consisting chiefly of greywacke pebbles, several of which exhibited striæ with a N. and S. direction.

On the Derivation of the Name Coldingham.

By ROBERT HOOD, M.D.

THE name of Coldingham is considered by Chalmers, in his *Caledonia*, to signify *Cold-dean*, with the Saxon affix of *ham*, a vill; but this explanation to me, is not satisfactory. As *cold* has not any meaning when applied to many, or indeed, to almost any of the places to which it is given, I think the root term *cole* or rather *coile*, as pronounced in Gaelic by a native, is more likely to be the correct word. The straits which separate Bute from Argyleshire are called by a Celt, the *Coiles of Bute*. In the eastern counties of England (in Mercia), where the Danes at one time predominated, *ing* is a very common termination to names of places; and the Saxon *ham* being affixed, leads to the supposition, that it was a later name joined to an earlier by a later people; a Saxon addition to a Cymro-Danish name.

The name of *Cold-dean* is also very inappropriate to Coldingham. Chambers in his "Picture of Scotland," says—"Coldingham is a place where the Goddess of Pleasure might delight to dwell;" and St. Andrew's Dene, which lies immediately westward from the village, is perhaps the loveliest dene in the lowlands of Scotland.

The letter *d* in the name is put in for the sake of euphony, to separate the two vowels; a circumstance which frequently occurs, as any one familiar with the Greek will easily comprehend.

Cole may then be explained by the place being strait or narrow; the word in primitive languages has that meaning, being given in mountainous countries to necks of land connecting mountains, or stretching from them, as *Cole de Trende*, &c.; and also to the various coal harbours and cold creeks, which are all narrow inlets of the sea or rivers. The meaning and derivation of the name may be explained in this way; *cole* (Cymric), narrow; *ing* (Danish), vale; and *ham* (Saxon), vill; or the village of the narrow vale. In corroboration of this, we find *Colding* a frequent name of places in Denmark, but never with *ham* affixed. The streamlet that runs from the village to the sea is named *Cole-burn*, and the mill upon it *Cole-mill*, and likewise the bog, or what was once a bog, in front of the Manse, *Cole-bog*. Probably, as has been mentioned, the word *cole* was given to the place before the Saxon word *cold* was introduced into the country.

Heronry in Chillingham Park, in North Northumberland.

By THOMAS TATE, of Alnwick.

ABOUT half-way down from the summit of Ross Castle hill, and within Chillingham Park is a thick plantation, called Fox's Knows, composed for the greater part of fir, intermingled here and there with a few lofty beech and plane trees. Visiting it in July, I heard hoarse discordant sounds, and saw numerous ungainly-looking birds peering down from their lofty perches, with an air betokening more of curiosity than fear. Here is located a heronry, the only one in North Northumberland. I counted forty nests in all, each nest being generally alone on its own particular tree. None, however, was on the lofty and almost inaccessible plane and beech trees, but upon the firs which could be easily climbed; and such were chosen by the herons, probably tempted by the safe foundation the branches afford for their huge wide-spread nests.

Having doffed my coat, I climbed to one of their nests, and found it made of sticks of fir placed crossways, and lined with sheep's wool and dry moss. Neither young nor eggs were in it; but the number of fish bones, and the bones of a water rat, gave unequivocal signs of recent occupation.

To the north-east is another but smaller breeding place, which was the original heronry; and my guide recollected its being there as far back as twenty years. Owing to increasing numbers and consequent want of room for nestage, the old birds drove away the younger ones, who took refuge in their present abode at Fox's Know, where they have been located about six years.

These herons wing their way to considerable distances during the day, in search of food; to the Cheviots, and valleys of the Till, Tweed, and Aln, and to the sea coast, a distance of from fifteen to twenty miles. Invariably they return home at night. In the morning they are early astir by day break, and they are late goers to their roost, for they are heard screeching and clammering over the houses of the villagers, as late as midnight, on their way homeward.

Two or three years ago, a young heron frequented the village of Chillingham; having as is supposed been hatched late in the season, it was unable to travel to a distance, and was therefore driven by inclement weather to seek food from the inhabitants. Many times during the day, for several of the winter months, it might be seen wandering from house

to house, fed by scraps thrown to it by the hospitable villagers. Dead rats, and even kittens, it has been known to carry off to the woods to devour at leisure. Unfortunately, some idle boys broke its leg, and, from that time to this, it has never again appeared in the village.

On my return homewards, when several old herons were hovering above me, my attention was directed to a mass, which had been dropped on the ground by one of the birds. On examination it proved to be an eel, the first half of which, from the head downwards, was in a half digested state; but the remaining portion was perfect, and had evidently not been swallowed, for the stomach of the heron has a prodigious digestive power.

The Kaim at Wark, on the Tweed.

By the Rev. PETER MEARNS, Coldstream.

KAIM is the Scotch word for *comb*; and when used as the designation of a detrital ridge the name is commonly supposed to contain some reference to the form of the ridge, as having a remote resemblance to a cock's comb. The ridge at Wark is understood to have been known by this name from a very remote period.

This kaim extends for seven-eighths of a mile—almost in a straight line from east to west, inclining towards the south at both ends, as is well seen from the Castle, which is near the middle. It thus runs parallel with the vale of the Tweed. Two hundred and eighty yards west of the Castle, it is intersected by a road leading to a graveyard. The intersection is named Gilly's Nick. The kaim is about sixty feet in height, and about 150 feet in width at the base, rising, where undisturbed, to a sharp ridge of two or three feet in breadth at the top. Between the Castle and Gilly's Nick there is a gravel pit, 80 feet wide, and 24 feet deep, which affords an excellent section, exposing the strata of which the kaim is composed. Another section was made at the east end a few years ago to obtain a site for a large school-room. At the foundation a thick layer of sharp sand was found, from which a sufficient quantity was obtained for all purposes connected with the building.

The kaim has been broken in several places to obtain sites for dwelling-houses belonging to the village, and is again

intersected by two roads leading to different parts of the village.

From the Castle to Gilly's Nick the original form of the summit is preserved; but the road from Cornhill to Kelso gradually ascends the south side of the kaim from the village till it reaches the top at Gilly's Nick, where the top is lowered and widened to allow space for the road, and after traversing it for a short distance it gradually descends on the north side towards the plain on which the village of Carham stands. This road, which was here formerly curved and uneven, was straightened and levelled twenty-eight years ago, under the superintendence of Mr. James Cunningham, surveyor, Coldstream. It might have been made perfectly level by skirting the kaim, but the land is valuable, and, unfortunately, for purposes of economy this interesting natural object was interfered with.

From the plan of the Ordnance Survey I observe that the road at the gravel pit (nearly on a level with the bottom of the pit) is 101 feet above the level of the sea, and at Gilly's Nick 111 feet. To this we add the height above the road, and find the summit of the kaim 125 feet above the sea. The relation of these remarkable ridges to the present ocean is always an important circumstance to be noted.* The kaims at Dunse Castle and Bedshiel are about 700 feet above the sea.

About twelve years ago the gravel pit was opened in the south side of the kaim at Wark, which affords a good opportunity of examining its internal structure. The soil is three feet in depth, and under it is one foot of small gravel, of a whitish appearance, evidently argillo-calcareous, with angular blocks of chert limestone, too large to be enclosed and therefore projecting above it. Beneath this is one foot, of small gravel, and under it one foot four inches of arenaceous clay, extending sixty feet in length, in which I observed a well-rounded boulder of dark porphyry two feet three inches in girth. This hard and heavy boulder seems out of place, as it could be lodged here only by a strong current; while the clay in which it is embedded, with its soft sand, implies still water. I presume it belonged to the upper stratum, and sank into the clay by its own weight. The next layer consists of three feet of larger stones, both square and rounded, amid which are small and short strata of sandy

* Dr. R. Chambers, in his *Sea Margins*, finds a beach at 125 or 126, p. 28.

gravel. In the upper part of this large stratum I observed a well-rounded, because far-travelled boulder of conglomerate, and close beside it a square block of sandstone from the neighbourhood. In the centre were clusters of the size and shape of cocoa nuts, and some of the size of the human head. Beneath these stones was a layer of pure sharp sand, about six inches in depth.

Thus have I described about ten feet of perpendicular depth, including nine layers more or less distinct. Each of these strata has a history. With the exception of the chert limestone, which is found about a mile to the west, and sandstone from the neighbourhood (there being very few blocks of the latter) none of the stones is found in the immediate locality *in situ*. Some bear marks of having travelled far, and having been long tossed in an ancient sea. We naturally propose the questions—Whence have they come? and by what agency were they carried?

We are able to answer in general that they have all come from the west. This we know not so much from the nature of the stones as the direction of the current. That the current was from the west is argued, not from the course of the river, but from the drift all around.* For instance, no boulders or fragments of chert limestone are to be seen west of Nottylees, where this limestone is found *in situ*; but they are in great abundance to the east, on the farms of Shedlaw and Wark. Fragments of jasper, from nodules in this limestone—some of them dimly translucent, with great variety of colour—are frequently picked up by the people employed on these farms, and regarded by some as natural productions of the soil. This is very much in the manner of Topsy in *Uncle Tom's Cabin*, whose only answer to the inquiry respecting her origin was, "Spects I growed." There are beds of limestone at Shedlaw and Nottylees, about a mile distant from each other; and midway between, there is a trap rock over which large boulders were carried by the current. Not one is found on the west side of this rock, but many fell on the east side of it, the force of the current having been broken by the projecting trap. We have an admirable exhibition of this fact on the Kelso branch of the North Eastern Railway, within a few yards of Carham Burn, which divides the two kingdoms, where the railway cuts

* Mr. Milne Home, in his *Geology of Berwickshire*, proves that the prevailing current of the diluvial waters in Berwickshire was from the west, (pp. 226-229).

through the trap, and large boulders are seen projecting from the inclined section on the east side of the rock; and the overlying limestone is also seen. From the west, then, undoubtedly the stones have come.

There is greenstone from the Tweed at Maxton, or Merton; basalt from Hume Castle; greywacke from the Lammermuirs to the west; conglomerate from the neighbourhood of Hawick; and dark porphyry from the Eildon Hills. I mention the places where such stones are found, and from which they were probably brought by the direction of the current. The pebbles of porphyry are of various kinds, but the larger blocks have a dark base with large crystals of calc-spar. The basaltic boulders may have come from the basaltic dike which crosses the Teviot at Hawick.* There are pebbles of quartz, both white and coloured, in the kaim. All the stones found in the drift of the adjoining fields have their representatives here. I have not found granite, and it is rarely found in the drift of Northumberland. I lately found a small block of it, of the nature of the Aberdeen granite, of the size of a cocoa nut, ten feet deep in the boulder clay, above the soft sandstone of a quarry on the Coquet opposite Warkworth; and afterwards a larger block on Alnwick Moor of Peterhead granite. Mr. Tate, our secretary, in an excellent Memoir on the Boulder Formation in Northumberland, says that he has met with one large block of granite, "measuring eight cubic feet, neither worn nor rounded, embedded in clay on the western acclivity of Alnwick Moor, at an elevation of 600 feet above the vale of the Aln below: this granite is identical with that *in situ* at Aberdeen. It is also important to notice that not one fragment of rock, of more recent age than the carboniferous formation, is to be found in the Northumberland superficial deposits."

On the south side of the kaim at Wark is a moss (the usual accompaniment of these ridges), now drained for cultivation, $2\frac{1}{2}$ feet in depth, resting on marl.

This kaim undoubtedly belongs to the drift or diluvial deposits, and supplies important illustrations of the diluvial debris.

I visited Campfield, two miles from Coldstream, to examine the beds of sand and gravel there, and compare them with

* Mr. Milne Home traced it for 26 miles continuously. (See his *Geology of Roxburgh*, p. 477.)

the ridge at Wark. I found a part marked off and used by the North Eastern Railway Company. It showed a section of twenty feet in depth. The strata are singularly contorted as if by an eddy, of which we have evidence in a deep narrow moss close adjoining. In some parts the soil is one foot and a half in depth; in others the gravel reaches to the very surface, without an inch of soil. When the Kelso branch of the North Eastern line was formed, a knoll, called Whale Knowe from its shape resembling the contour of a whale, was removed, by an arrangement with the late Mr. Laing, of Cornhill, who also farmed Campfield. I saw an excellent crop of turnips on the field where the knoll once stood—the bottom answering fully better for soil than the top had done. In the gravel-pit the layers of sand and gravel are distinctly marked, the gravel being uppermost and almost wanting in the lower strata of the section. The bottom has been dug for sand, exposing a few feet in depth, exhibiting layers of pure sharp sand. In the upper strata there are patches of earthy sand, or argillo-arenaceous earth. The depth of the layers is constantly varied by the strange twistings of the eddy. The stones of the gravel are small, scarcely any being of the size of a common hen's egg—there being thus a great difference between these beds and the ridge at Wark. There is one large boulder of chert limestone from Nottylees.

Much difference of opinion exists among geologists regarding the agencies by which large boulders have been conveyed, and ridges containing them have been formed. What has been called the glacial theory, which identifies a kaim with the moraine of a glacier, though supported by great names, must be set aside as utterly impossible. It entirely fails to account for the stratification which is a marked feature in kaims, besides being in other respects objectionable. It seems to me that those are right who contend for the combined action of glaciers or icebergs with currents in order to account for the whole phenomena.

Boulders are found everywhere, and each has a history; some have travelled far from their parent rock. Angular blocks of granite from the Alps are found on the Jura, having travelled 50 miles across one of the widest and deepest valleys in the world. Hundreds of these Alpine erratics are as large as cottages, and one of them in particular, celebrated under the name of *Pierre à Bot*, rests on the side of a hill above 900 feet above the Lake of Neufchatel, and is no less than 40 feet in diameter—supposed to be the largest in the

world (*Lyell's Manual*, 143). The block of granite on which the equestrian statue of Peter the Great stands in St. Petersburg is the largest ever moved by man. Its weight is variously estimated from 800 tons to 1200, but it is little more than half the size of the *Pierre à Bot*.

When an iceberg melts in the ocean its burden of boulders, sand, and gravel falls to the bottom, and is subjected to the action of currents. How far these currents may have been modified by the high bank of shale on the Tweed, which is about 60 feet at its highest point above the surface of the river, and by the Shedlaw heights on the south, so as to raise the kaim at Wark, I cannot determine. Something, however, may be inferred from the form of the ridge. It undoubtedly owes its origin to drift, and the strata have been formed by the great wave of an ancient marine fiord ere the ground was raised and the sea retired, leaving the lovely valley through which our noble river now flows. This agrees well with the gradual slope on the side towards the more tranquil waters that filled the south valley.

It is stated by Lyell of the Oasars of Sweden, which may often be traced for many leagues through the country, that "in places where they are composed of large rounded boulders, of about the size of a man's head, no stratification is observable; but where, as is more usual, they consist of gravel and fine sand, *they are invariably stratified* in the same manner as sand and gravel in the beds of rivers." (Quoted in Mr. Home's *Geology of Roxburgh*.) Many of the boulders in Wark Kaim are much larger than a man's head; some of the chert limestone appear to be about half a ton in weight; but as the stratification is distinct, it differs in this respect from the ridges of Sweden. Two of these boulders in the bottom of the gravel pit* measure respectively—one is 2 feet 10 inches long by 2 feet 1 inch, and 1 foot—the other 2 feet 3 inches long by 2 feet, and 1 foot.

I have been more careful to state facts than to discuss theories regarding the process by which kaims have been formed. Facts are eternal, but theories must be modified or perhaps entirely abandoned as new facts are discovered helping us to explain those previously ascertained. It is easier to state plausible theories than by a careful induction to advance slowly to the principles which explain ascertained facts; just as we find in every nursery that a child can run

* Now in the Manse Garden, behind the West Church, Coldstream.

to the nurse's arms ere he can balance himself to walk. The kaim at Wark has hitherto been overlooked by scientific explorers; but as it was lately visited by the Berwickshire Naturalists' Club, which has several members well qualified to give an accurate account of its structure and origin, we may expect to hear more of it by and bye.*

As to theories of formation, they are only such as apply to all similar ridges, modified by local circumstances, for no writer has yet applied them to this. It has been suggested that a thick covering of sand and gravel was spread over a large space, and that, by a sudden emergence of the land, the water rushed off, and left considerable ridges. We can hardly conceive of the broad vale of the Tweed, at this point, as a mere cut or gutter in a great gravel bed, and the opposite banks are materially different from this ridge. Besides, there is internal evidence, that the kaim was deposited in the form in which it now exists. A kindred theory has been suggested—that a stream may have acted on each side at different times, gradually reducing the bed of gravel till it assumed the form of a ridge. This would suppose the Tweed to have run at one time on the south side of the kaim—a supposition which has been formed and expressed by some independently of our present question. So far as I can see, nothing of importance can be said in favour of the southerly course, nor can anything very definite be produced against it. But in opposition to the idea that the course of the river in the least degree affected the form of the kaim, two very conclusive arguments may be stated.

1. At the bottom of the gravel pit the strata are seen to dip towards the south from the very centre of the ridge giving it its present form; whereas a section made by a flowing stream would have been perpendicular, and if afterwards reduced to a slope by the crumbling of loose materials under the action of the atmosphere it would have been unstratified. The cross section shows that the sloping strata, which form the abrupt declivity of the ridge, are more numerous than those in the centre. I counted 16 distinct strata in 9 feet of perpendicular depth. The section of a bed of gravel formed by a rapid stream is perpendicular, but it is modified by the character of the current. If inclined at an angle the strata do not show the same angle. The

* The Club examined it with great interest as a remarkable deposit of a former sea. (See Transactions for 1863.)

question here is not the formation of alluvial beds by a river, but the carrying off of superfluous gravel in order to the formation of a ridge.

2. The same argument is equally applicable to the north side; but in order to fluvatile action there, we must suppose that the course of the river was some 30 or 40 feet higher than at present, which may surely be regarded as fatal to the theory.

I find myself drifting to the conclusion that the ridge owes its origin and present form to currents in a former sea.

In land floods we occasionally see striking illustrations of the power of currents. There is a small stream which descends rapidly from the neighbouring hills, and enters the sea two miles west of Dunbar. The heavy rain which fell on the Lammermuirs on the 29th of Sept., 1846, swelled it to a torrent, and the small bridge, where it is crossed by the then recently formed North British Railway, was insufficient even with its dry arch (meant only for extraordinary occasions), to allow a free passage for its waters, which were speedily pent up behind it; and just as the train, in which I happened to be travelling, was about to cross it, and the guards were consulting with the surfacemen about the propriety of doing so, the whole bridge was swept away before our eyes, large stones being tossed to a distance as a plaything by the turbulent torrent.

In the operation of such existing agencies as we have now specified, we have no very remote analogy to the currents by which kaims have been formed, though we may have some difficulty in determining the local circumstances by which these currents were controlled and guided.

Miscellaneous Botanical and Zoological Observations.

I. Notes by WILLIAM BOYD.

At the Meeting of the Club held in June last at St. Abb's Head, the following plants were noticed:—

Arenaria verna; *Silene maritima* and *Sedum Rhodiola*, both in great profusion, attracting general attention from the large clusters of white flowers of the one, and the unusually large green branches of the other, growing out of the crevices of the precipitous rocks overhanging the sea.

On my way to the Rothbury Meeting, *Epipactis latifolia*

was seen in woods near Thrunton Crags, and *Equisetum Telmateia* growing abundantly in a wood near Powburn, many of the plants reaching to the height of six feet. At the Rothbury Meeting the following plants were observed:—

Veronica Buxbaumii; *Lepidium Smithii*; *Vicia sylvatica*; *Betonica officinalis*; *Ranunculus Flammula*; *Hieracium prenanthoides*; *Hyoscyamus niger*; *Lastrea Oreopteris*; *Bartramia fontana* in full fruit; and *Asplenium Ruta-muraria* growing in the bridge at Rothbury.

The Painted Lady Butterfly I have seen in some quantity at Hetton, the first season I have noticed it there.

II. Note by GEORGE TATE, F.G.S., &c.

HYMENOPHYLLUM TUNBRIDGENSE. This delicate and pretty fern has this year been discovered by a shepherd, growing among sandstone rocks in the high moor-lands north-westward of Old Bewick. This is an interesting addition to the flora of the district.

III. Notes by ARCHIBALD JERDON.

At the Meeting at St. Abb's Head, *Neckera Crispa* was found growing (sparingly) on rocks by the sea coast, nearly opposite Coldingham Loch. I believe this is the first time this moss has been found in Berwickshire.

At the Rothbury Meeting the Club were much pleased with the collection of heaths and allied plants in the grounds of Sir William Armstrong's new mansion, and which he kindly allowed them to inspect. Nearly thirty different varieties were growing in a healthy condition on a sloping bank near the house. The soil and situation seemed congenial to the plants.

IV. Notes by JAMES HARDY.

1. **FIELDFARES and REDWINGS.** The severe snow storms of 25th to 30th January, and 18th to 24th February, 1865, accompanied as they were by vigorous frosts, made cruel havoc among the flocks of fieldfares and redwings that annually visit the Berwickshire coast. The fieldfares are wild, wary birds, but in the hour of their calamity, they became quite stupified and helpless, and allowed the sparrow-hawks to knock them down, without attempting to escape. In the day time, with feathers ruffled and taking short heavy flights,

they frequented the sheep-folds to pick up scraps of turnip; but these afforded little sustenance, and as the storm increased, many crept into furze bushes and perished. After the snow had disappeared, the sides of sheltered denes, where perhaps they had roosted at night, were strewn with the dead bodies of the poor famished wanderers. About Oldcambus there were fieldfares only, but from St. Abb's Head to Eyemouth, all of which coast I explored in the spring, redwings were intermingled in smaller numbers with their bulkier congeners. The mortality on that part of the coast had been very great. Each little nook of shelter in the deep ravines that communicate with the sea-side bore witness to it; the retired bay-lets and the crannies of the rocks were scattered over with decayed feathered skeletons; and along the expanse of Coldingham Sands, the "*disjecta membra*" were frequent to be seen. On the advent of the storm, large flocks descended to these sands, and endeavouring to pick up marine insects as the tide rose, were overwhelmed in the advancing waves, which they were too feeble to avoid. It must have been a sad sight—the fate of these Norwegian thrushes. One might have expected on their reappearance this autumn, that their numbers would have been diminished; but the fieldfares appear to be as abundant as ever. At Coldingham I saw also a dead woodcock, and the spoils of the common thrush upon the grassy braes, then mantling with primroses and cowslips as if no deadly blast had ever swept across them.

2. The TWITE (*Fringilla Montium*). I formerly noticed the occurrence of this bird in Berwickshire, from the inspection of some of its feathers that had been brought to me. Early in October, I observed a small flock busy among the upper branches of the Scotch pine, in the fir woods round the "Dog-bush," above Marigold. It has a peculiar call-note, heard at a considerable distance.

3. *ACMÆA TESTUDINALIS*. I met with this pretty limpet alive in rock-pools at the extreme point of the projecting reef of rocks between the foot of the Coll-burn and Linkholm (Coldingham). It was associated with *Trochus Margarita*, near the edge of the Laminarian zone, under the shady projection of large, loose, submerged stones. This rock is grey-wacke indurated by contiguity with trap. I have no doubt that this has been the immemorial residence of this mollusc, and the reason why it was found there no sooner, is that it never was looked for there before or overlooked. I could

not find the *Lottia virginea* in these pools. Does the *Acmæa* take its place here?

4. *BOREUS HYEMALIS*. October the 21st, 1865, I found this insect crawling among moss on a rock on the hills above Hazelridge. This would be the epoch of its appearance, as it had not acquired its full colour. It was much on the alert, and attempted to bite in defence of its liberty.

5. *CUVIERIA PHANTOPUS*. A Cockburnspath fisherman brought this curious Holothurian, which had swallowed his bait in deep water, forty miles off St. Abb's Head. I saw another at Coldingham, brought in with the boats.

6. *GOODYERA REPENS*. Following up Mr. Boyd's discovery of this in Roxburghshire, it is satisfactory to learn that this interesting Orchis has been detected in the original field of the Club, and on a spot that must have been more than once examined by several of its founders—viz., Buncle Wood. It was brought to light there, about two years since, by John Anderson, a workman in the woods of the Earl of Home, who by his own unaided efforts has taught himself the names of most of the Border plants falling under his observation. I visited the wood on the 12th August, when the plant was going out of flower. It was growing in profuse patches near the east end of the wood (Sligh-houses, once the patrimony of Hutton, the geologist, being near at hand), in a somewhat dampish, poor clayey soil, under the shade of fir trees. The spot where it was first found, lay at some distance to the west, in "Buncle Old Wood," on some hummocky ground, inclining to peat, with heath and *Melica cærulea* growing about, underneath a clump of aged Scotch pines, now all cut down. The *Goodyera* grew on the dry tumps, for there are bits of bog in several places, in great luxuriance, when first noticed; but except in spring it is not now visible there, being unable to withstand the parching sunbeams which scorch it up; but when the ground is replanted, it will most likely recover itself in the shade that appears to be so very congenial to it. Outlying patches of the plant have been seen by J. A. behind the cottage of Lintlaw-burn, and in one of the Brockholes plantations, near the march between Brockholes and Drakemire.

This same Buncle Wood (a planted fir-stripe, and not a remnant of that primeval forest that sheltered Wallace, as Blind Harry tells us, when in pursuit of Cospatrick), contains also, *Pyrola minor*, *Lastræa spinulosa*, *Polypodium Phegopteris*, and *Listera cordata*; and some fine raspberries

grow there, of the garden variety, with red and yellow fruit, that have been sown there in the droppings of birds, like all our so-called wild currants and gooseberries. People still recollect the old garden at Sligh-houses, whence they may have been derived. In an adjoining field, at the roots of *Mentha arvensis*, there is found a pinky Coccus or scale insect, with its accompanying white excretion, very likely an unnamed species.

Goodyera repens owes its earliest notice and subsequent specific name to Dr. Joachim Camerarius, physician to the free city of Nuremberg, and son of the friend and biographer of Melanchthon. In his "Hortus Medicus et Philosophicus," Frankfort, 1588, p. iii., he mentions it as growing in opaque woods on the mouldering residue of decaying branchlets. His XXXVth Plate is devoted to a characteristic figure of it ("optime" assents Haller), with the name of *Orchis radice repente*. We may even refer the figure to Conrad Gasner (died 1565), for to this source Haller thinks is to be ascribed the merits of the figures of Camerarius, (Haller "Enum. Stirp. Helv.," p. 18). This figure is copied in Johnson's "Gerard," p. 227; Parkinson's "Theatrum Botanicum," p. 1355; and in a diminished form in John Bauhin's "Historia Plantarum," II., p. 770, where, by the stupidity of the editor, it is transposed. *Orchis repens* next appears in the "Hortus Aichstettensis" of Basil Besler, Nuremberg, 1613. Christopher Menzel figured varieties with spotted leaves in his "Pugillus Rariorum Plantarum," Berlin, 1682, Plate 3. As a British plant it is omitted in Ray's "Synopsis," 1696, but is given as an alien in his "Sylloge Stirpium," 1694. Its first discoverer in Scotland was perhaps Dr. John Hope, Professor of Botany in the University of Edinburgh from 1762 to 1786 (Bower's "Hist.," III., 19-22), distinguished as the first who publicly taught the Linnæan System in that seminary of learning. (Pulteney's "Sketches," II., p. 387). His locality for it, was in a "wood opposite to Moy-hall, on the south side of the road to Inverness." Compare Lightfoot's "Flora Scotica," p. 541, with Hudson's "Flora Anglica," p. 387. The original specific title has adhered to it, but the generic underwent much variation, till Dr. Robert Brown, in the "Hortus Kewensis," established for this plant the genus *Goodyera*, so named from Mr. John Goodyer, of Maple-Durham in Hampshire, who contributed many rare plants to Johnson, Parkinson, and How, and the aid of whose manuscripts Dr. Merret considered to have been an important boon to his "Pinax."

7. *ANAGALLIS CÆRULEA*. In the spring the seed of this was sent me from the Highlaws, near Eyemouth, where it grows on the surface of a trap-dike. Further on in the season, at my present residence, while shedding aside some corn to look for another plant, behold! the blue eye of this *Anagallis* fixed upon me, upbraiding me for not looking better about myself at home; which had I and others done at first, there would have been less need to note down these novelties from year to year. Willdenow, "*Floræ Berolinensis*," p. 82, sanctions the distinction between this and *A. arvensis* as specific, an idea that has not found favour in Britain.

Records of Glaciated Rocks in the Eastern Borders.

By GEORGE TATE, F.G.S., &c.

THE discovery of dressed and striated rocks on Abb's Head, of which a notice is given by Mr. D. Milne Home in page 221, has revived the interest in these geological phenomena, and induced me to look up my notes of similar facts, and also to re-examine the Farn Islands, where the boulder clay overlies the basalt. Even detached observations on such a subject are worthy of record, as a contribution of materials to help the solution of the problem as to the causes which have produced glaciated surfaces in the border-land.

1. In 1849 I gave an account in the Tyneside Transactions, Vol. I., p. 348, of ice action on limestone *in situ*, lying below boulder clay on Hawkhill Estate, near to Ratcheugh Crag; one part of the surface was flat and even, presenting a smooth brightface, like marble artificially polished; other portions were rounded and undulating, but still exhibiting the same mirror-like polish; over the whole surface were fine striæ, from one to six inches in length, some being one-tenth of an inch in breadth; there were also a few grooves, one quarter of an inch in depth, one inch apart, parallel to each other, and from one to six inches in length; the general direction of both striæ and grooves was pretty nearly in the line of the dip of the rock, from north to south. Blocks and fragments of rock, polished and striated in a similar manner, were in the overlying clay; one large block of limestone, measuring three feet long by two feet broad and two feet thick, was striated and polished on the under surface, the striæ having

a direction, as the stone lay, of north-west to south-east. It is particularly observable that all the dressed rocks in the boulder clay, both here and in other parts of the border-land, have been derived from rocks *in situ* within the district; none has travelled far.

In the Tyneside Transactions of the same year, there is a record by the late W. K. Loftus (the Assyrian traveller), of his discovery of glaciated limestone rocks at Belsay in South Northumberland, the scorings and scratchings being in the direction of the dip of the limestone, which is here, I believe, N.N.W to S.S.E.

These are the first recorded observations of glaciated rocks in Northumberland. Dr. Buckland had previously examined the county in search of traces of ancient glaciers; but he erroneously referred superficial deposits in the gorges and on the flanks of the Cheviots to the moraines of glaciers; for these deposits, on careful examination, prove to be formed of *water-worn* rocks.

2. A little north of Dunstanburgh Castle, a low bank of boulder clay, just above high tide mark, covers a limestone which is polished, striated, and grooved similarly to that of Hawkhill, some of the grooves are two feet four inches long and one quarter of an inch broad; the direction of the striæ and grooves is from west-north-west to east-south-east.

3. At Swinhoe, the limestone, which is also below the boulder clay, is similarly polished and striated in the direction of north 50° east to south 50° west.

4. At Middleton, near to Belford, the limestone below the boulder clay is polished and striated in the direction of north-west by west to south-east by east.

5. Along the coast from Foxton Hall to the mouth of the Coquet, there are hills, from twenty feet to fifty feet in height, formed of boulder clay, gravel, and sand. Beneath this clay at Birling Car, which is one mile south of Alnmouth, I found a gritty sandstone, (containing grains of magnetic protoxide of iron,) with traces of ice action, and having coarse striæ in the direction of north-east to south-west.

6. The surface of the glaciated porphyry on Abb's Head is similar to that of the glaciated limestone, excepting that it wants the mirror-like polish; but this arises from the different structure of the two rocks; the striæ are of the same character; and in one of the cleared spaces the direction is from west-north-west to east-south-east, and in the other from north-west to south-east.

7. In the account given by me of the geology of the Farn Islands, in the Proceedings of the Club, Vol. III., p. 223, it is stated that, "on these islands are patches of the boulder formation, which covers many parts of Northumberland; it forms the sub-soil of the Farn, and on the Stapel it is three feet thick overlying the basalt." Subsequently to the Meeting of the Club at Abb's Head, I revisited these islands with the view of searching for traces of ice action; and on the Stapel Island, the most favourable for observation, I found the surface of the basalt smoothed and striated over considerable areas; so much so, that it is pretty certain that the whole island had been subject to ice action. The boulder clay, which had covered the whole, has been denuded from many parts; but still, excepting where the dashing of the waves has broken the surface, smoothed and striated surfaces are traceable even along the sea-shore. From some other parts I dug away the covering of boulder clay, and found dressings and striations in a more perfect state, and resembling those on the porphyry at Abb's Head. The direction of the striæ is from N.N.W. to S.S.E.

8. I have never succeeded in discovering organisms in the boulder clay in the eastern borders; but Mr. Richard Howse, in an able paper printed in the Proceedings of the North of England Institute for 1864, giving a description of glaciated rocks near the mouth of the Tyne, records the discovery in the boulder clay at Tynemouth of small pieces of *Cyprina Islandica*, a marine shell, which is common enough in the seas off the Northumberland coast in a living state. Confirmatory of this, is the observation of Mr. Binney, of Manchester, who informed me in 1864, that he had detected several fragments of this shell in the boulder clay near Tynemouth. The discovery is important; for if it can be extended to other localities, it would throw doubt on the view originally proposed by Agassiz, and revived recently by some geologists, that the polished and scratched surfaces and the accumulation of the boulder clay were produced by the movements and abrasion of sub-aerial glaciers and land ice.

9. Glaciated blocks in the boulder clay have been observed more frequently than glaciated rocks *in situ*. They may be found in most good sections of this clay. The eastern part of Northumberland especially, from the coast to the flanks of the hills, is much covered with it. Numbers of glaciated blocks were exposed when cuttings were made through deposits of clay, gravel, and sand, for the railway between

Alnwick and Bilton. The position of one block was peculiar ; it was mountain limestone of a light drab colour, four feet long by three feet three inches high and three feet broad ; it penetrated about one foot into an irregularly stratified gravel, which was five feet in thickness and composed entirely of water-worn rounded stones, many of which had come from a distance ; it passed through a stratified red clay fifteen inches in thickness, and it was sunk about one foot into fine stratified sand.

When the Club met at Greenlaw in 1864, one large block with a glaciated surface was detected in the railway cutting near that place ; and as the deposit in which it was found appeared an extension of the lower beds forming the kaims, the observation possesses some interest. In Northumberland, the ridges at Chathill, Newham, and Hoppen are similar to the Berwickshire kaims but of smaller extent ; and in these, I have recently found a few glaciated rocks, among the water-worn gravel and sands of which these minor kaims are principally composed.

To theorise on these facts is not my intention at present ; but I may briefly state, that geologists generally have given up the hypothesis which attributed them to the action of great debacles or violent rushes of water. Neither polishing nor striæ are produced by floods, flowing over rocks, or driving before them stones or mud. Stones are smoothed by attrition as they are rolled along, but they are never polished or striated. Great blocks transported down the glens of the Cheviots, by the tremendous water-falls from the hills, bear upon them no such marks. I have examined the effect of the highest tides and greatest storms on our coast ; but though I have seen evidences of masses of strata broken down and swept away, and great blocks many tons weight driven over other rocks considerable distances, yet no traces of polishing or striation could be seen. So far as is at present known, ice is the only agent which produces such effects ; not only do the glaciers on the Alps, in Iceland, and other mountain regions polish and striate the rock surfaces over which they move ; but even the ice-covering of an extensive area of land, with a gentle slope, such as Greenland, produces similar effects, by slowly moving down to the sea shore ; and it may be inferred that the great icebergs, some of which are four miles in circumference and eighteen hundred feet in height, when grounding and moving over the sea bottom would also polish and striate rock surfaces.

The love of simplicity has, perhaps, led theorists to attribute too much to one cause. The question is complicated; as conditions in the problem, there are not only glaciated rock surfaces and glaciated boulders mixed pell mell in the lower clay; but similar boulders in gravel and sand beds, and also stratified sands and clays and water-worn gravels; and in addition, the occurrence of marine shells in the lower as well as in the upper clays. A comprehensive theory must allow for the play of various agencies—the movement of ice down mountains and over extended areas of land to the sea shore, the stranding of icebergs, the transport of gravel and sand by marine currents, and even the quiet deposit of mud in stiller waters, during the long period comprehended in the boulder clay formation.

An exhaustive examination of such a district as the eastern borders might be useful; more observations are required; and it is desirable that the Members of the Club should note down observations, when good sections of superficial strata are presented. These may, hereafter, be placed on a map of the eastern borders, shewing the areas covered by the boulder clay, and especially the direction of the scorings on the surfaces of rocks *in situ*.

Rain Fall at Glanton Pike, Northumberland, in the year 1865. Communicated by FREDERICK W. COLLINGWOOD, Esq.

			Inches.
January	..	..	3.14
February	..	..	1.52
March	..	..	1.75
April	..	..	0.82
May	..	..	4.89
June	..	..	0.28
July	..	..	3.70
August	..	..	3.12
September	..	..	0.17
October	..	..	10.27
November	..	..	2.53
December	..	..	2.07
Total			34.26

Top of Rain Guage—Above Ground, $7\frac{1}{2}$ inches; above Sea Level, 534 feet.

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Kelso, September 27th, 1866. By ARCHIBALD JERDON, Esq., President.

GENTLEMEN,

IN commencing the usual address which is expected from the Presidents of this club on their retirement from office, I must express my regret that on two occasions I was prevented attending the field-meetings of the season—on both occasions by absence from home,—and I feel that I owe an apology to the members for my non-appearance, as it is certainly the duty of the President, elected by them, to endeavour to be present at all the meetings.

As it is customary for the President to give a brief account of the meetings held during his year of office, I shall proceed to do this, without further preface, and then make some remarks on the whole.

In the first place, however, I must mention the last meeting of the year 1865, which was held at Berwick, on the 28th September, when about twenty members were present.

The accounts were examined and passed; and the subscription for the ensuing year was fixed at 6s.

Thereafter, the following were appointed as places of meeting for 1866, viz:—Eglingham and Old Bewick, on 31st May; Earlston, on 28th June; Beadnell, on 26th July; Cockburnspath, on 30th August; Kelso, on 27th September.

It was also agreed to, that the President and Secretaries may be authorised to alter the day of any meeting, provided a requisition, signed by at least ten members, be laid before them, shewing the expediency of the change, and provided also that at least one week's notice be given to every member of the alteration.

After business was over the members strolled about in several directions. Some examined the geology of the coast northward of the Tweed, of which Mr. Tate subsequently gave a description.

After dinner, the President read an interesting address, and on his nomination Archibald Jerdon, Esq., was elected President for the ensuing year. Mr. Tate afterwards gave an account of the glaciated rocks of the Borders.

The first meeting of the season was held at Eglingham and Old Bewick, on the 31st May.

About twenty-five members were entertained at breakfast by the Archdeacon of Lindisfarne, at Eglingham Vicarage. After breakfast, the old church of Eglingham was visited, and most of the party then set out on their walk.

The Kimmer Lough—a small piece of water, though formerly of much greater extent—was the first point of interest. Nothing new, however, was discovered there, and the party then bent their steps to Beanley hill, where the Ancient British camp or fort, and a sepulchral cist were inspected and commented on. In walking between the Kimmer Lough and Beanley hill an adder was killed by one of the party. These dangerous reptiles are still by no means uncommon in moorish parts of the country.

Descending the hill, the Ring or Ringlets camp—a well marked site—was examined, and thence the party proceeded to Harehope, where a quantity of curious iron scorïæ is to be seen, covering an entire hill side. A small number of the members preferred to search the Eglingham woods for plants, and were met again at the chapel at Old Bewick.

From Harehope the walk was directed up the Eglingham burn to the Corbie Crag—a wild and barren spot, in which the sides of the hills and the course of the burn are strewn with immense blocks of freestones. Mr Langlands mentioned that a pair of ravens had, until lately, bred annually in these crags, but had been scared away by a relentless gamekeeper.

Ascending thence, Old Bewick hill was reached, passing in the way several large blocks of stone, on which are inscribed the mysterious circular markings, about which so little is yet known, and which were duly inspected by the club. On the top of the hill, the large and perfect British camp was examined with interest, and the party then descended to Old Bewick chapel, a small but interesting relic of Norman architecture, possessing an “Apse” or peculiarly holy spot to the east of the chancel.

The members now converged to the school-room, at Old Bewick, where dinner was provided—not the least interesting of the day’s proceedings. After dinner, botanical memoranda from Dr. Tate were read; and a notice from Mr. Hardy, of the occurrence of *Acmea testudinalis* at Greenhaugh point; and Mr. Langlands favoured the club with an interesting paper on the History and Natural History of Old Bewick.

Nothing new was observed at this meeting, save that Mr. Wm. Boyd, Hetton Hall, supposed that he had discovered a rare plant—*Erinus alpinus*—growing on the walls of the old chapel, but this hope was, ere long, dashed to the ground, by the ascertainment of the fact that the seed of the plant had been sown by the Misses Langlands, and consequently that it was not indigenous. In the woods on Beanley hill several large patches of *Vaccinium Vitis-idaea*—not a very common plant—were observed, and the beautiful *Trientalis*

Europea was found in flower in a bare spot. The common wild Hyacinth was also in full flower, making the woods here and there resplendent with its azure hue. But generally speaking the woods and fields were bare and barren, owing to the previous ungenial weather, and even the Hawthorn had not, as yet, expanded its blossoms.

The second field-meeting of the year took place at Earlston, on the 28th June, when between twenty and thirty members appeared at breakfast, at the village inn—an excellent hostelry.

After breakfast a long and interesting paper on Earlston—its history, legends, and objects of interest—was read by Mr. Tait, of Kelso; the members thereafter proceeded to view the remains of the tower, which belonged to Thomas the Rhymer, of which only a very small portion now remains.

The party then divided—a few proceeding by rail to Gordon station, on the Berwickshire line, and thence towards Mellerstain, in the hope of finding the *Linnæa borealis*, which had formerly been discovered in that vicinity; and the greater number ascending the hill of Cowdenknowes—well known in Scottish song, and famous in olden time for the quantity and size of the broom it produced.

The botanical party were successful in their search, and rediscovered a large patch of the *Linnæa* in full flower, in the exact locality where it had formerly been found. This Berwickshire station is the most southern one known for this plant of northern regions, except another at Hartburn, in Northumberland. A considerable quantity of *Listera cordata*—rather a rare plant—was also found in the same plantation.

The party that ascended the hill were rewarded by a beautiful view of the valleys of the Tweed and Leader, and also made an important geological discovery, having found in a sandstone quarry on the side of the hill, fossil remains—viz., scales of the *Holoptychius Nobilissimus*—which proved it to be the old red sandstone, here underlying the porphyry of which the mass of the Cowdenknowes is composed.

After dinner, the achievements of the day were reported,

and hereafter sections of the terraces, in the valley of the Colledge, among the Cheviots, made by Mr. George Cunningham, of Coldstream, were exhibited ; and Mr. Adam Matheson, of Jedburgh, gave the meeting the results of his observations as to the formation of the well-known Greenlaw Kaims.

The third meeting was held at Beadnell, on the 26th July. I was not present at this meeting, but Mr. Tate has kindly furnished me with some particulars, of which the following is an abstract :—

Upwards of forty members were entertained at breakfast by Mr. Embleton, Beadnell Cottage—one of the oldest members of the club—and after breakfast his excellent collections, in many branches of natural history, were examined by the party with much pleasure before setting out on their excursions.

One division of the party rambled along the sea-coast from Ebb's Nook to Sunderland, observing its geological features, and visiting the ruins of a small chapel supposed to belong to the 13th century.

The largest division sailed from Beadnell harbour, to explore the Farne Islands, and visited the three principal ones. The natural history of these islands has been already described at length in the transactions of the club, and the additional observations will appear in a separate paper.

The party were reunited at dinner, which took place in a tent, in a field near Beadnell—Mr. Embleton occupying the chair.

After dinner, Mr. Milne Home gave an able account of the geological features observed on the islands ; and a rare fossil fern from the old red sandstone of Berwickshire, and some bones discovered on the estate of Shoreston by the Rev. L. S. Orde were exhibited, of which an account will appear in the transactions.

The fourth meeting of the club took place, on the 30th August, at Cockburnspath, where, notwithstanding the very unfavourable weather of the day previous, a tolerable muster of members appeared. I am indebted to Mr. Tate for an account of this meeting also.

After breakfast, the party, under the guidance of Mr. Hardy, of Oldcambus, first traversed the beautiful Dunglass dene, and then broke up into several detachments.

One detachment explored the Pease dene; another wandered along the sea shore towards St. Helen's church; while a third examined the fossiliferous strata cropping out along the coast.

In the Pease dene a great many species of ferns were observed, among which may be mentioned—*Polystichum angulare* (the great fern of the locality, and generally speaking, a rare species), *Polystichum aculeatum*, and (perhaps?) *P. lobatum*, if that fern be admitted as a distinct species. Of rarer ferns, were also observed *Sclopendrium vulgare*—not a very common species in Scotland—and *Asplenium Adiantum nigrum*.

The party reassembled, and dined under the presidency of Mr. Tate, at the comfortable inn at Cockburnspath, and after dinner reports were made, by Mr. Middlemas, of the ferns noticed in the Pease dene; by Mr. Langlands, on St. Helen's church and the Ancient British settlement near it; and by Messrs. Tate and Stevenson on the geology of the district.

Mr Langlands has also sent the following notes regarding the old church of Dunglass:—"On a rising ground to the north of the mansion house of Dunglass, and surrounded by fine trees, stands the ruin of the collegiate church of Dunglass.

"It consists of a nave, chancel, and two transepts—cruciform, with a square tower in the centre. The vaulting is almost perfect, but most of the windows have been destroyed. The east gable is gone. There are two fine windows remaining in the chancel, and a very beautiful sedilia.

"The owners of Dunglass continue to use the south transept as a family burial-place. It is closed in by a common deal gate. On the walls are several mural tablets which are not very ornamental.

"Little is known of Dunglass—It is generally stated to have been founded by Sir Alexander Home, of that Ilk, in

1450, for a provost and prebendaries, but Chalmers in his *Caledonia*, Vol. II., p. 312, says, it was founded in 1403, by his father, Sir Alexander Home, and that the son only added to the endowment (see Rupell's Edition of Keith's Bishops, p. 468).

“Mr. Muir, in his volume entitled, ‘On Church Architecture of Scotland,’ refers once or twice to details of Dunglass, but quite casually. If we could get the foundation charter we should make something out of it, but little is to be gleaned elsewhere.”

On reviewing the year's proceedings, not much that is new presents itself, but it is scarcely to be expected that discoveries can be made, *every year*, in ground that has already been so often explored.

The most note-worthy events seem to be the rediscovery of the *Linnæa borealis* near Mellerstain, and the Geological facts observed on the Cowdenknowes hill and at the Farne Islands.

The antiquaries, who form a numerous body in our club, can point, among other matters, to the attention that has been drawn to the curious circular markings on rocks and stones which are so common in the Eastern Borders, as a proof that they have not been idle. I believe the Berwickshire Naturalists' Club has the honour of being one of the first public bodies which directed the attention of antiquaries to these mysterious symbols, and, though the key to them has not yet been discovered; let us hope that by perseverance, and by the united efforts of different persons, some satisfactory explanation will, in time, be arrived at.

I may here allude to the influence which the extension of railways has had on our club. It has enabled us greatly to enlarge our area of operations, and to visit localities, which, but for their agency, must have remained unvisited. And I may observe that railways, though they cut up a country sadly, are not always destructive of the pursuits of the naturalist. The botanist finds many plants, and sometimes uncommon ones, growing in luxuriance by the side of railway

cuttings, and on railway embankments, while the sections of the earth's surface, displayed to the eye of the geologist, are often instructive as well as interesting. The entomologist, too, may observe many of his insect friends pursuing their allotted functions in the comparatively waste ground often afforded by the sides of railways.

I trust I may, in conclusion, be permitted to say a few words on the present position and composition of our club, and I do this with the more freedom as I am an old member.

We are now a very numerous body, and new members are admitted at almost every meeting, but it appears to me that we are becoming rather a heterogeneous body also. No doubt our meetings are very pleasant reunions, but I fear we may have departed from the original idea and character of the club by admitting members who are not, strictly speaking, naturalists or antiquaries.

In making these observations, I believe I speak the sentiments of several of the older members of the club, and I think it is worthy of our serious consideration, whether, in zeal for the prosperity of the club, we may not have too largely and indiscriminately added to our numbers. At any rate, let us hope that in future more of our members will become "working members," and will lend their aid in making those researches and forwarding those objects for which the club was instituted, viz., the elucidation of the natural history and antiquities of the eastern Borders.

And now, gentlemen, it only remains for me to thank you for the honour you conferred upon me in appointing me your President—an office which I fear I have very unworthily filled.

On the History and Natural History of Old Bewick.

By JOHN CHARLES LANGLANDS, read at the meeting held at Old Bewick, on May 30th, 1866.

In times antecedent to any historical records that we possess, Old Bewick must have been the centre of a very considerable population, if we may form an estimate from the extensive remains of camps and dwellings of the race by whom it was occupied prior to the Roman dominion. The foundations of buildings of a late period which are continually turning up in the surrounding fields, indicate that its inhabitants continued to be numerous in after times—drawn together probably for protection, to the fortified tower which, as usual, had taken the place of the ancient camp.

The manor of Bewick, anciently called *Archi Morel* or *Archil Morell*, was in Saxon and Norman times holden under the king's castle of Bamburgh, to whose court leet, together with many other possessions in these parts, it continues to be summoned to this day.

There is an ancient road across the moors from Bewick, which is called the Bamburgh Court Road, by which the tenants of the drengage manors to the westward went to Bamburgh to do suit and service for their lands. The *drenches* or *drenges*, *drenchi*—were free tenants of a manor. This tenure was very ancient, existing before Norman times. Mr. Tate in his "History of Alnwick" says it "was confined to the limits of the old Saxon kingdom of Northumberland; *teinage* and *drengage* being essentially the same and differing only in degree, the latter term being applied to the holding of one property, and the former to more than one; under it the person was free, but the conditions were servile; the services were of the same kind as those of *bondagium* though less in amount, and not necessarily performed by the *dreng* or one of his family. The word is of Danish origin, from *dreogen*, to do, to work."* Spelman says they were those who were put out of their estates at the coming of William the Conqueror and afterwards restored thereto, at their making it appear that they were the owners thereof, and neither in Auxilio or Consilio against him; so that *drengage* was not a mean servitude, but an honourable tenure—owing suit and service to the crown or the grantee of the crown.

* History of Alnwick, Vol. I., p. 93.

Such were the *drengs* of Bewick and other manors in the neighbourhood held under the castle of Bamburgh.

The vill of Bewick was given to Tynemouth, a cell of S. Alban's, by Matilda, wife of Hen. I., who before 1107 A.D., and probably very soon after her coronation, granted a charter, of which the following is a translation:—

“Matilda of England Queen, to Roger Bigot and all the King's Barons, French and English, in Northumberland, greeting:—Be it known, that I have granted to God, S. Alban, and S. Oswin and to Richard the Abbot, the land of Archi Morell, to be possessed for ever; for the soul of my Father. And I will, that S. Albans hold it, with peace and honor, with Sac and Soke, and Tol and Team, and Infangentheof, and all custom. And I command you Roger, that you do faithfully defend the Church of S. Albans and S. Oswin—witness Bernard the Chancellor.” And this grant was confirmed by K. Hen. I. in London.

King Henry I. granted to Richard the Abbot, the manor of Egulewineham fully and entirely, as well as that moiety which Winnuth—Winoc—or Winsauf the hunter gave lastly as that which he gave at first.

Matilda was the daughter of Malcolm, king of Scotland, and in all probability this part of Northumberland formed a portion of her dowry. In 1093 Malcolm, who invaded Northumberland, was slain near the river Aln, according to the letter of the monk of Kelso, who states that he has found a book which he calls the history of the Danes, in which is recognised the judgment of God in the death of Malcolm in Northumberland which he had so often wasted. The person by whom Malcolm was killed, is there named Morell of Bamburgh; the Saxon chronicle says he was slain by Morael of Bamburgh, who was the lieutenant or steward of the Earl of Northumberland; “et Malcomi Regis susceptore,” meaning apparently, godfather to the king, or as Hailes supposes, godsip or gossip of the king, from having stood godfathers together. The lands of *Archi Morel* having been given by Matilda to S. Alban's and S. Oswin for the good of the soul of her father, who was buried at Tynemouth, the similarity of the names would suggest some connection with the *Morell* of Bamburgh, especially as the manor of Bewick was held under the castle of which this Morell was the lieutenant.

About 1136—Geoffrey de Gorham, Abbot of S. Albans “with the will of the Chapter, granted to Ædgar son of Earl Cospatrik;

the land of Archi Morell, to wit *Bewic* with all the lands to it appertaining, and the land of Egulingham which Winnoc the Hunter gave to S. Albans and S. Oswin—in feodofirma and Themeslage, and Sac and Soc Tol and Theam and Infangentheof, in wood and plain and in waste, as Abbot Geoffrey holds it better of the King; but the said Ædgar shall render for the same lands, to the Monks of Tynemouth, four pounds at the Purification and at the feast of S. Cuthbert—also to the Monks of S. Albans, twenty shillings—or if he be in want of money 7 Oxen, each worth, three shillings.” This Ædgar son of Earl Cospatrick, seems to have joined the king’s enemies (Hen. II.) and taken flight into Scotland; whereupon K. Hen. seized upon his possessions as forfeit, but restored them to S. Alban and S. Oswin, as they held them from Queen Matilda.—Ed. I. 21. The abbot and prior were summoned to appear and show by what warrant they claim to harbour men, who came with *Grith* (venientes infra gritheros) and to have a gallows and tumbrils (furcas et tumbrilles) in Tynemouth and *Bewyk*. The subsidy roll of Ed. I. 24. gives the names of the tenants—value of goods—*Summæ bonorum*.

Thomæ Clerici xvs ijd—inde regi xvj. d. ob.

Ricardi filii Hyne

Johannis filii Adæ

Johannis Littil

Adæ filii Adæ

Ricardi Bercarii

Ricardi filii Adæ

Adæ Littil

Ricardi Cocheden

Willielmi Servientis

Nichlai Præpositi

Hugonis filii gameli

Thomæ filii Augnetis

Alicie Hund

Alexandri Clerici

Ricardi filii Walteri

Summa hujus villæ xvji li. ix s. ij d. (pro bentur) inde Domini Regi xxxj s. ix d. ob.”

In 1253, Henry III. on the petition of the monks of Tynemouth granted them (Jan. 21,) to hold a market weekly in their manor of *Beauwick* on Thursday, unless the market should be to the injury of the neighbouring markets. The Tynemouth chartulary contains a taxation of spiritual and temporal goods of the priory, made in 1292, in consequence of a dispute with the assessors of the crown on the former valuation. The manor of Bewick is set out at £30 15s. 6d. 1360.—Ed. III.—The prior’s mill at Bewick is mentioned, and the prior petitions for the restoration of lands held of him by Adam, son of Nicholas de Lilleburne.

In the reign of Hen. VIII. came the plunder of the monasteries. Tynemouth was the only monastery in Northumberland which escaped the operation of the act passed in 1536 for the suppression of the smaller foundations. The surrender of the greater monasteries was effected without

any of that popular excitement which attended the dissolution of the smaller houses. The members were pensioned, and the assent of the nobility and gentry purchased by a share of the spoil. The lower classes bitterly lamented the advantages of which they were deprived. Durham was preserved for ecclesiastical purposes; and Tynemouth was regarded as an alien—a cell of S. Alban's.

The surrender of the priory is dated 12th January, 1539; these surrenders are all in one form, and there is reason to believe that although the signatures of the monks purport to be attached, they were not subscribed by themselves. The joint assent could only be manifested by the common seal. The king's agents thought to give stringency, as against the members themselves, by this private consent. To the prior and his fellow sufferers a trifling allowance for life was granted out of their own property. In 1551, Dudley, earl of Warwick, created duke of Northumberland, obtained from Edward VI. a grant of the possessions of the priory, yielding out of the demesne lands to the king £15 15s. 6d. yearly, subject to a lease to Sir Thomas Hilton.

In the account of Sir Thomas Hilton, knight, the farmer of the demesne lands, late in the possession of the priory, with divers tithes and other commodities, is this—

Bewyke—Rents of tenants—Robert Collingwood the Bailiff there, renders account of xx s. for an yearly rent of assize of Thomas Legh, Doctor of Laws, master of the Hospital of Burton Lazars, for their lordship or lands of *Harop*, and of xij s. and iiij d. for a fee farm rent of Cuthbert Ogle Clerk, due to the king for lands and tenements in Eglingham which he lately purchased. And of xxij £ —s. viij d. for rents of farms and 29 copyhold tenants in husbandry, holding lands, messuages, cottages, meadows, feedings and pastures (*Bewyke Magna* township) demised to them by the late Prior of Tynemouth by copy of Court roll, in the various parcels and at different rents including £xxj. —s viij d. for the farm of a Water Corn Mill, then in the tenure of Robert Collingwood. For the rent of a close called "*Le Awney*"* containing two acres of pasture, he answers not, because it is occupied by the Bailiff as part of his fee—as in the time of the Prior of Tynemouth, nor for the rent of a dove-cote within the site of the manor, also occupied by the Bailiff, nor for any profit accruing from the farm of the Stone Tower there, because it is kept entirely for the defence of the inhabitants of the Lordship in time of war.—He also answers for New *Bewyke* township

* The field still bears the name of the *Auna Close*.

—for vi £ xiii s. iiij d. for the farms of 10 copyhold tenants—also x £ — iij d. for 8 tenements at *Whipperden* and for xj £ for 13 tenants at will in *Lilleborne*—also for rents in *Eglingham*—the total sum on the whole, being lv £ —s. iij d. Of this Robert Collingwood, of *Beauwiche*, 6 miles from Scotland, it is said, in 1536, “he may despend v £ yearly and may serve the king under the Prior of Tynemouth, by the office of Bailiffship of the same, with XX horsemen : and is a true and sharpe borderer.”

The stone tower is mentioned in the return of fortresses in the district of Northumberland compiled, at the command of Hen. VIII. previous to the Battle of Flodden. “Holds and townships to lay in garrisons — owners and inhabitants. Bewick—the prior of Tynemouth—Gilbert Collingwood inhabitant—40 men—from Tevydale 8, from the Merse 11 miles.” Thirty years afterwards, in the “Book of the State of the Frontiers and Marches betwixt England and Scotland,” written by Sir Robert Bowes, knight, at the request of the Lord Marquis of Dorset, the warden general, we have—

“1550.—At *Bewyke* is a good tower of the Kings Majesties inheyretance as of augmentaē'ons of his Grace's Crowne, late belonging to the suppressed Monastery of Tynemouth—A Part thereof is newly covered with leade, and thother parte is not well cov'ed, nor in good repare'ons. And it is much requysytee that the said tower, were kept in convenyant rep'r for it standeth in a fyte place for the defence of the cuntrye thereabouts and is able in tyme of warre to contayne 50 men in garryson.”

A small part of this pele tower was standing, in the memory of some old persons living, within the last thirty years. Every vestige has now disappeared, except the foundations which are visible on the surface of the turnpike road which passes over the site.

1557.—Mary I.—The priory lands reverted to the crown. From the Escheat Rolls, 10 Eliz., it appears that the queen was found seized of the possessions of the priory.

3rd May, 12 Eliz., the queen granted them to Sir Henry Percy, by virtue of which grant they remained in the family of Percy till 8 Car. II. (1632), when Henry, earl of Northumberland, the survivor of three grantees, died. Portions of the lands of the priory were from time to time granted by the crown to various persons to be held at a fee farm rent.

Inter alia ; A Water Mill at Bewick ; the Mill house and curtilage, worth 33s. 4d. yearly, in fee farm to Edw. Ferrers of London, Merchant, and Francis Phillips of London, Gent. 30 Sep.

7 Jas. I. The Manor of *Bewick* all the fee farm rents there, also, all lands and tenements *Bewick Magna*, parcel of the said Manor, worth £19 14s. per annum; besides a Water Corn Mill valued at 66s. 8d. per ann: tenements and land in New Bewick, parcel of the said Manor, worth £6 13s. 4d.—per ann: 8 tenements on Whipparden, parcel of the said Manor worth £10 0s. 4d. yearly—certain lands, tenements in East Lilbourne, parcel of the said Manor, worth £1 10s. 2d. yearly: certain of lands tenements and cottages in Eglington, parcel of the said Manor, worth £2 9s. 3d.—besides a mill there, worth £1 3s. 4d.—the new rents in Bewick, amounting to 6s. 9d. yearly and all the perquysites and profits of the Court there; being of the total value (exclusive of parquysites) of £36 7s.—were granted to Edw. Ramsay and others 22 Jas. I. June 29.

The tithes of the rectory of Tynemouth and the tithes of Wylam are the only tithes mentioned in the “Particulars of the Sale of the Fee Farm Rents.” No record has been discovered of the disposal of the other parts of the spiritual possessions of the dissolved monastery, but some information is afforded by the Oliverian Inquisition or Survey of Church Livings taken at Morpeth on June 1st, 1652, which contains, among other presentments, that the parish of Eglington is a vicarage, the late Bishop of Durham patron thereof, Mr. — Ellwood minister, and the value thereof £60 per ann.; that there are four chappels, viz., Bewick, Branton, Brandon, and Lillburne, and that it is fitt that Brandon and Branton be united to Ingram Church, and East Lillburne and Wooterton to the church at Ilderton. The valuable tithes of the church at Eglington became, in the thirteenth century, appropriate to S. Alban’s; owing to the proximity to the Borders the value diminished.

1533.—Lease granted by Robert the Abbot to Cuthbert Ogle of Chopynnton, gent. In 1589 the tithes of Bewick and of Eglington were leased to Sir Henry Widdrington. On March 9th, 30 Hen. VIII., they were demised to Sir Thomas Hilton, knight, having been held by the monastery four hundred and five years and very few of the original possessions lost—a contrast to the history of landed estates of laymen!

In the rentals and rates for Northumberland in 1663

The value of New Bewick is stated ..	£110.
“ Old Bewick „ ..	£114.
“ East Lilbourne „ ..	£100.

At this time Mr. William Delaval of Dissington was the proprietor.

In 1680 Ralph Williamson, Esq., was the owner. Of this date there is a curious record of the names of those who rode the *Bounder* with him (Oct. 16, 1680), containing an accurate description of the "Bewick Bounder and the Lords that bounder upon it."

"The Bounder begins at the blue stone at the foot of Hebburn Mill Burn, and so up the Burn to the Sandy Hill, then to the March Cross on the top of Hebburn Wood, then to the holy stone on the top of the hill, then to the holy stone on the top of the Tathey Well, then to the holy stone above the Reedwell head, then to the Iflorance Bridge, then down the Letch to Davie's Dean—so far bounders Robert Hebburn, Esq., upon it.

From Davie's Dean down the water on Herily de burngate to the Three Barons' Ford—so far bounders Lady Ogle on it.*

From the Three Barons' Ford up the strand to the Hanging Well Law, then to the Cairn of the top of the Hanging Well Hill, then to the Standing Stone down the Sike, to Sailcreek Law Cairn—so far bounders Mr. William Armorer and Mr. Thomas Selby for Ellingham and Charlton.

From Sailcreek Law Cairn to Sailcreek folds, then to Balmbro' fords—so far bounders Mr Cuthbert Collingwood for Ditchburn.

From Balmbro' fords in a green way to Curley Heugh Well—so far bounders Justice Ogle and John Carr for Ditchburn.

Then from Curley Heugh Well in the way to Hareup Watergate—so far bounders Justice Ogle of Ellingham.

From Hareup Watergate up the watergate to Hareup Hill, over the hill by two little cairns of stones to a great cairn of stones on the top of Hareup hill, then down the hill to a little rick of stones on the west side of the way; then, into a watergate to the foot of Hareup wood, then up the headland to Fowberry's Long—so far Henry Ogle and Mr. John Storey for Hareup.

From Fowberry Long, in a dark way, and in a headland and thro' the foot of Randeburn, then up the water to the foot of Gallow Law Mill dam, then in the six butts, then up the *Forrer* of a Headland, then to the Dyke end then down the Dike to the burn, then up the burn to the Street—so far bounders Lady Ogle for Beanley and Gallow Law.

Then in the Street to Wapperton Dike Corner, then up a great dike, and in the Easter Street down to the Moss, then down the midst of the Moss to the Runner, down the Runner to the Coal ford—so far Sir Richard Scott for Wapperton.

From the Coal ford down the Watergate to Richardson's Dike Corner, then down the Letch, and then down the water at the

* The 11th Earl of Northumberland left an only daughter, Elizabeth, who married at the age of 14, Henry Cavendish, *Earl of Ogle*, and afterwards duke of Newcastle. This was in 1679; he died the following year, and she married, in 1682, the duke of Somerset.

foot of the bank, then from the water down the Haugh about 60 yards, and then to the south end of Pill Moore butts, then up to a Darn road to the March Stone at the south corner of Rosdon Loaning, then next to a Dikey to the west side of Hing rish, then up the water still and round about another piece Haugh, then up the water still to Kingdon Brow—so far bounders Mr. Patrick Crow for Rosdon on it.

From Kingdom Brow in a Dikey to West Lilburn Moss, then down the Moss side to Calders Well, then to Calders Knab, then through a Letch to a March Stone—so far Mr Justice Ogle and Mr Thomas Proctor for West Lilburn.

So down the water to a ford, then turns with the water off Six Store Plate, and then down to a Carn, then to the Ash Tree, then to the East side of the Alders, then down a Letch to the water, then to the end, then to the hill, then in a road to the Burn, then down the watergate to the north corner of Petershaugh, then to the headland forrer—so far Lord Grey for the Newtown.

From the north headland and Forrer in the west side of Hendry's piece to the water, so thro' the water to the three Alder Trees, and then to a north forrer of a headland, and up the north forrer of the headland, and then turn in by the east end of a few Butts, and then up the water, then turn in the north forrer of a headland to the Bell, and then along a Dikey to *Boulers Rout*, then to the forrer of a headland, then in the east forrer of a headland to the water, then up the water to the Blue Stone we begun at.

The names of those who rode the Bouders with Ralph Williamson, Esq., Oct. 16, 1680.

Old Bewick.

Rob. Reaveley
Thos. Thompson
Rob. Thompson
Robt. Collingwood, Senr
Robt. Collingwood, Junr
Thos. Tindall
Cuth. Newton
Wm. Richardson
Ra. Crisk
Jno. Reedford
Wm. Archbold
Andw. Thompson
John Abernethy
Geo. Gibson
Geo. Greave
Thos. Bone
Jno. Bone
Geo. Humble

Bewick Mill.

Robt. Wallace
Geo. Humble

Hareup.

Mr. Henry Ogle
Jno. Story
Geo. Jennison

East Lilburn.

Jno. Ramsay
Martn. Ilderton
Wm. Hopper
Ra. Howburn
Ra. Hewitt
Jno. Moore
Thos. Reaveley
Hew Turnbull

Wapperton.

Jas. Wallis, Senr
Jas. Wallis, Junr

Old Bewick.
Jno. Howburn

New Bewick.
Ried. Macdowall
Wm. Macdowall
Thos. Macdowall
Cuth. Macdowall
Rich. Macdowall, Junr
Jas. Macdowall, Senr
Jas. Macdowall, Junr

Wapperton.
Thos. Bell
Geo. Huntley
Jno. Bell
Jas. Nichol
Alex. Wallace
Edw. Brewis
Matt. Burn
Wm. Thompson
Thos. Rutlish
Jas. Carr
Gowen Clinch

Ralph Williamson was the possessor in 1695, in which year he repaired the chapel, a record of which remains on one of the stones of a doorway. His widow continued in possession till 1722.

I am indebted to the kindness of Mr. Dickson, clerk of the peace, for the following extracts from the court books of the castle of Bamburgh with its members :—

“Parish of Eglingham.—Townships of Old and New Bewick. 1695.—At the Court Leet, view of Frank Pledge, with the Court of Wm. Forster, Esq., held in the Castle 24 Oct., 7 Wm. III., A.D. 1695.

Names of the free tenants who owe suit to the castle aforesaid, inter alia,

To 1696—Radus Williamson, Ar. p. tend. in Old and New Bewick.

1702—The Hrs. of R. Williamson for do.

1705—The same. (Described to be the Court of the Right Honble. and Revd. Father in God, Nathaniel Lord Crewe, Bp. of Durham, and Lady Dorothy his wife, and the Worshipful Thomas Forster of Bamborough, Esq.)

1710—The Widow of Ralph Williamson for lands in Old Bewick and New Bewick. (Described as the Court of Nathaniel Lord Crewe only; this was after he purchased the manor).

1721 (May)—Maria Williamson, widow of Ra. Williamson, Esq.

1722—The like. (Described as the Court of the Trustees of Lord Crewe for the first time, and so continued afterwards.)

1731—William Harvey and Maria his wife, for lands in Old and New Bewick.

1748—Mary Harvey, widow of Wm. Harvey, for the same.

1760 to 1772—Eliab Harvey, Esq., for lands in Old and New Bewick.

1779—The Heirs of Eliab Harvey for the same.

To 1797—All the same; which names remain till 1807; in this period the manor passed into the hands of John Dinning,

having been purchased by him from one of the heirs of Eliab Harvey—Montagu Burgoyne, Esq., and his wife (daughter of the above). In 1804 it was again sold to Will. Sadlier Bruere, Esq.; his name appears in

1808 to 1829—Wm. Sadlier Bruere, Esq., for lands in Old and New Bewick.

1830—Addison John Cresswell Baker, Esq., for do.

To 1839–1840, and to present time, A. J. Baker Cresswell, Esq., for do.

The numerous changes which have taken place in the ownership since the suppression of the monastery are striking. Given *in capite* by Henry VIII., and not thriving with the receiver, it soon reverted to the crown. Twice again bestowed by Edward VI. and Elizabeth, it has gone on changing from one possessor to another. Those who are familiar with Sir Henry Spelman's work, may be apt to think with him, that wealth in this instance also has failed to avert from the possessors the consequence of holding property once dedicated to the church.

I shall not attempt to discuss the question of the origin of the *camp*s which you have seen to-day. They belong to the Ancient British period, and have been the work of a numerous and powerful race, and in the age in which they were constructed must have been deemed impregnable. The *burial-places* have been ably described by the Rev. William Greenwell, in his paper, published in our last year's Transactions. Mr. Tate's valuable paper, in the preceeding year's Transactions, has told all that is yet known of the peculiar markings, which this people have left on the rocks in the vicinity of the camps. Let us hope, that since attention has been so widely attracted to them, the true meaning (whether religious or sepulchral) of the symbols may be unfolded. The sculptures which you have seen to-day were probably the first of the kind that were noticed. The following description is from Mr. Tate's paper:—"This stone is of an irregular quadrangular shape, 10 feet by 8 feet, sloping northward, and rising where highest $4\frac{1}{2}$ feet above the ground. Originally rough and uneven on its surface, it has been further deeply hollowed and furrowed, especially on its southern aspect, by the play of the elements. Evidence it gives of the durability of the coarse gritty siliceous moorland sandstones of Northumberland; standing so high above the ground, it has not like other sculptured rocks had the protection of a growth of peat; and yet, though it has endured the wasting influence

of storms not less than twenty, and it may be some thirty centuries, twenty-seven figures are still traceable, when the stone is viewed by the light of an evening sun. All the figures are of the common type; indeed, there is less variety on this stone than on any other of similar dimensions. The figures, however, being much connected with each other, gave the whole a strange maze-like appearance. Imagination could revel amid these complicated forms; life budding might be seen—the passage of life to a higher life—the transmigration of souls—central suns—orbits of planets—attendant satellites—and perhaps, too, divinity might be thought symbolised by the central hollow; and the radial grooves penetrating through the circles and beyond them, might represent a Divine influence pervading all the realms of matter and spirit.”

The interesting Norman chapel has been so fully described—in a letter by Mr. P. C. Hardwick, published in our Transactions for 1857—that it is unnecessary for me to make any remarks upon it. After the dissolution of the monastery, this and the other chapels in the parish of Eglingham continued to be served by stipendiary curates.

Visitations from 1577 to 1587—*Bewicke* is mentioned as being served with stipendarie preestes, but having no incumbent. At the chancellor's visitation, Jan. and Feb., 1578—*Bewicke*, Curatus caret, Johannes Wilesme clericus parochialis ibidem; Personaliter.

Oswold Temple, Alanus Reveley, Johannes Buston, et Alexander Sympson, Personaliter. The former parish clerk, the latter churchwarden. General chapter, July 30, 1578, before the Venerable Mr. Henry Dethiche, Surrogate and Deputy of the Venerable Mr. Robt. Swifte, vicar general and official principal.

Task, the gospel of St. Matt.—Thos. Bennett, vic. of Eglingham, George Arnet, curate of *Bewicke* appeared; but no remark is made with respect to the *task*. At the same visitation John Wifsharde, curate of Brandon, is stated not to have appeared; and Andrew Wright, a Scotsman, curate of West Lilburne, was not cited. Luke Davison was then curate of Eglingham. Of 99 persons cited, only 23 had complied with the *Task*:—imperfectly performed by 22, and neglected by 16. Twelve men excused on account of their learning, 10 more absent, 16 absent from old age, 6 Benefices vacant. Andrew Wright, of West Lilburne, was excommunicated in 1578 for non-attendance.

1581. Alnwick, Jan. 25. The chapels of West Lilburne and Branton without curates. Process to issue against the vicar of Eglingham for his neglect. Branton is mentioned as not having an incumbent, but was served by a stipenr. Preest.

In the Great Rebellion, these chapels, together with the parish church, were more or less destroyed during the occupation of the Scottish army under General Leslie. The Bewick chapel was repaired in 1695, by Ralph Williamson, Esq., then the proprietor of the manor; and services continued to be celebrated in it until it was unroofed by a high gale of wind, and allowed to fall into decay. At the visitation of Archdeacon Randall in 1768, it is stated to be again in ruins. A second restoration has now been commenced, and will be conducted under the directions of Mr. P. C. Hardwick, after a careful study of the original; and every stone replaced that still remains on the ground. The pure archæologist may, perhaps, be disposed to sigh over the loss of a picturesque ruin; but those who have witnessed the ravages which *time* and *wanton destruction* have recently made, will rejoice that this choice relic of Norman christianity is to be rescued from becoming an unsightly heap of stones—and once more dedicated to God's service.

A few words on the natural history will suffice. At Corbie Crag, the peregrine falcon—as I have been informed by Mr. Selby of Twizell House—had her nest within the last 50 years. A pair of ravens built their annual nest at the Doo, or at Corbie Crag, until very recently. They also have been expelled from their long cherished homes, like the Prior, by another Henry VIII., in the form of a persecuting gamekeeper; and we have been deprived of this charm amidst our wild moorland scenery. We still, fortunately, possess a few choice specimens of the little blue hawk and the kestrel, and also of the harrier. How long these little active police may be allowed to keep in check the small bird depredators may be doubtful. Like the weazels they may be doomed to destruction; and our crops abandoned as a prey to hordes of rats and flocks of sparrows. The king fisher visits us; and the blackheaded gull, the wild duck, teal, curlew, golden plover, red and black grouse breed on the moors. The badger formerly kept his burrow with us—he has disappeared. A catalogue of the plants would be very long. The following rarer plants, several of which you have seen to-day, may be noted:—*Trientalis Europea*, the favourite flower of Linnæus, *Genista Anglica*, *Myrica Gale*, *Vaccinium Oxycoccus*, *Corydalis claviculata*, *Habenaria viridis* and *chlorantha*, *Anagallis tenella*, *Botrychium lunaria*, *Lycopodium selaginoides*, *Parnassia palustris*, *Menyanthes trifoliata*; this last with several of the *Orchis* family is becoming rare. The *Hymen-*

ophyllum Tunbridgense, has been lately found. The *Osmunda regalis* and the *Polypodium Dryopteris* flourished for a few seasons after being introduced, but they have disappeared, having, it is supposed, been pilfered. The *Nuphar lutea* grows in the Kimmer Lough. In 1854, the *rhizomes* or submerged stems were exposed when a deep drain was cut to lessen the lough, and they were seen extending through the mud in every direction and interlacing with each other, resembling in appearance the *Stigmaria ficoides* of the old carboniferous era. *Ancylus lacustris*, *Pisidium pulchellum*, and *Physa fontalis* also occur.

On the hill sides near the Harehope Burn are considerable quantities of iron slag, the refuse of ancient smeltings. The iron ore might have been originally smelted by the primeval metallurgists, much in the same way as was done in late years by the Hottentots, in holes cut in raised ground, which after being thoroughly heated received the ore, over which a large fire was made and supplied with fuel, from time to time, till the ironstone was melted.

In concluding this paper, I must beg to express my acknowledgements for much valuable information which I have derived from Mr. Sidney Gibson's beautiful work on Tyne-mouth Priory; also, to Mr. John Stuart, of Edinburgh, and Mr. Dickson, of Alnwick, for their kind assistance; and especially to Mr. Tate, for placing his valuable notes at my disposal, as well as for his readiness to afford information at all times.

EARLSTOUN.

By JAMES TAIT, Falcon Hall, Kelso.

At the present day the village of Earlstoun is not of great importance. Its population according to the last census was 980, that of the whole parish was 1825. The superior of the village is Lord Haddington who owns two-thirds of the rental; and it is governed by a baron bailie appointed by his lordship. There is also a court consisting of two bourlawmen appointed by the bailie—a remnant of an ancient institution that has prevailed extensively in this district—as “Birley Coorts,” are among the traditions of the Borders as a name for any particularly stormy meeting. The court of bourlaw-

men had its origin in those times, not very remote, when out-field, unfenced land, was general in the country, and their duties consisted chiefly in fixing damages for cattle that strayed over the marches, though it is possible they were instrumental in settling disputes on other matters also.

In the village there is one manufactory for woollen cloths, in which employment is given to a large proportion of the inhabitants. The steam engine for driving the machinery is nominally 65 horse power, which by pressure can be increased to one half more, and the water is equal to 50 horse power additional. There are 72 power looms, two hundred work-people are employed, and about 299,520 lbs. of wool are annually consumed in the mills. Formerly the place was celebrated for gingham, and all over the country "Earlstoun gingham" have long been famous. Though manual work of this kind has to a great extent been superseded, there is still considerable traffic in gingham, but the manufacture, instead of being confined to Earlstoun, is carried on in other villages where hand loom weavers are still found to exist.

The situation of Earlstoun is particularly romantic. It stands on the left bank of the Leader, two miles from its junction with the Tweed, and while sheltered by its surrounding heights from the bitter north wind, it looks out through a pleasant vista toward the south. The scenery is rich and gorgeous, while the classic broom of the Cowdenknowes indicates a soil of very unusual productive quality. A mile up the Leader is Carolside, with a well-stocked deer park, the only one except Ancrum in the eastern border counties of Scotland. To the south is the Black Hill, which gives a character to the whole district, and from which the place is understood by some to have derived its name.

The original name of Earlstoun was Ercheldoun, or Ercildoune, which in Cambro-Brittanian means "The Prospect Hill." It is a place of great antiquity, and seems to have possessed some importance, having, at least occasionally, been a royal residence. The foundation charter of Melrose Abbey, granted by King David I., and dated June 1136, is subscribed at Ercheldun. A confirmatory charter, granted by Prince Henry, son to David, in 1143, is likewise dated at Ercheldun. The Lords of the Manor at that time were named Lindsay, a family that belonged originally to Essex, but one of whom attached himself to Earl David before he ascended the throne, and accompanied him into Scotland. This family seems to have had considerable power, having held lands in Clydes-

dale and the two Lothians as well as Berwickshire, and one of them—Walter de Lindsay—was a witness to the *Inquisitio Davidis* in 1116. Another of the family—William de Lindsay—acted as Justiciary of Lothian from 1189 to 1199. He was succeeded in this office by Patrick, fifth Earl of Dunbar, and about the same time *Ercildoune*, with the adjoining lands, seems to have been acquired by the powerful descendants of *Cospatrik*. At the east end of the village there once stood a stronghold designated the Earl's Tower; and on what is now termed the *Hawk Kaim*, the hawking-house of the earls is believed to have stood. By some, the modern name of the village is derived from the fact of its having been an earl's residence; but of this theory, though it comes to us endorsed with the authority of Sir Walter Scott, we have great doubts. In official documents, dated about 1558, we find the name softened into *Ersiltoun*, from which the transition into *Earlstoun* is very easy and natural.

Though little remains to commemorate the residence in *Earlstoun* of the powerful Earls of March, time has dealt more gently with another ancient relic—the remains of the *Rhymer's Tower*, near the south-west side of the village. The race of poets, and especially of prophets, is sacred, and all that pertains to them is had in affectionate remembrance. The facts actually ascertained regarding Thomas the Rhymer are comparatively few. He appears like a dim reality six centuries ago, and the fame he acquired among his contemporaries has thrown its shadow down even to our own times, without any substantial foundation on which his great reputation should rest. The date of his birth was probably about the year 1219. He was alive and in the full blaze of his prophetic honours when King Alexander III. was killed in 1286, and he seems to have been dead in 1299, for in that year his lands were conveyed by his son and heir to the *Trinity House of Soltre*, thus fulfilling an alleged prophecy of his own—

“The hare sall kittle on my hearth-stane,
And there never will be a Laird Learmont again.”

It is remarkable that the superiority of the property called *Rhymer's Lands*, now owned by Mr. Charles Wilson, still belongs to the *Trinity College Church* in *Edinburgh*. It would almost appear as if Thomas had held his lands not direct from the Crown, but from the Earls of Dunbar; for his name does not appear in any State document of that period. Nor does it appear that the lands were of large extent, for

the son and heir of Thomas resigned "*totam terram meam cum omnibus pertinentibus suis quam in tenemento de Ercildoun tenui,*" and through old deeds the dimensions of the lands can be observed unaltered for the last three centuries back at least. There is no evidence that Thomas ever bore the surname of Learmont, though he has often been named Thomas Learmont by subsequent writers. In his own day he was known simply as Thomas of Ercildoun, or Thomas Rimour de Ercildoun, the latter designation being employed in the charter written by his son. It has generally been understood that the designation Rhymer was bestowed in virtue of his poetical gifts, though even this is uncertain, for Rymour was a Berwickshire name in those days, one John Rymour, a freeholder, having done homage to Edward I. in 1296. That Thomas composed the romance of Sir Tristrem, a "sedgeing tale," as De Brunne calls it—that is a tale for recitation—may be considered certain, and the popularity of this composition at the time was very great. For some time it was retained only in tradition, but afterwards a tale with this designation was published in various editions, and in more than one language. What purports to be the genuine effusion of Thomas was edited by Sir Walter Scott from a thick quarto volume of manuscript, containing 334 leaves and 44 different pieces of ancient poetry, presented to the Faculty of Advocates, Edinburgh, by Alexander Boswell, of Auchinleck, father of Johnson's biographer, in 1744. The manuscript is written on parchment, in a distinct and beautiful hand, which the ablest antiquaries regard as pertaining to the earlier part of the 14th century, that is not long after the Rhymer's decease. The name of "Thomas Rimer" appears as a witness to a charter granted to the monks of Melrose by Peter Haga, of Bemersyde, the original of which has been discovered in the General Register House, Edinburgh, but which unfortunately wants a date. The only other fact to be noted, is the existence of a stone in the church wall of Earlstoun with the inscription:—

"Auld Rhymer's race
Lies in this place."

Tradition says the stone was transferred from the old church, which stood some yards distant from the present edifice. In 1782 the ancient inscription was defaced by some senseless fellow in a drunken frolic, but the clergyman compelled him to replace it in the same words as before. The defaced characters were very ancient, the present are quite modern,

and the spelling also is modernised. The right of sepulture is still claimed there by persons named Learmont, an indication that if Thomas did not bear that surname it was adopted by his descendants.

But the fame of Thomas with the multitude has arisen chiefly from his character as a prophet. In this character alone is he mentioned by such ancient writers as Fordhun, Barbour, Wintoun, and Blind Harry. Robert de Brunne alone mentions him as a poet. One recorded instance of his vaticinations being immediately verified was on the death of Alexander III., of which Boece, translated by Bellenden, gives the following account:—"It is said, the day afore the kingis deith, the Erle of Merche demandit ane propheyt, namit Thomas Rimour, otherwayis namit Ersiltoun, quhat wedder suld be on the morrow. To quhome answerit this Thomas, that on the morrow afore noon, sall blaw the grettest wynd that ever was hard afore in Scotland. On the morrow, quhen it was neir noon, the lift appering loune, but only din or tempest, the Erle sent for this propheyt, and reprevit hym that he prognosticat sic wynd to be, and na appearance thairrof. This Thomas maid litil answer, but said, noon is not yet gane. And incontinent ane man came to the yet schawing that the King was slane. Than said the propheyt, yone is the wynd that sall blaw to the gret calamity and truble of all Scotland. This Thomas wes ane man of gret admiration to the people, and schaw sundry thingis as they fell; howbeit they were ay hid under obscure wordis." The concluding clause of this passage indicates the real source of the Rhymer's reputation. He was obviously a man of great sagacity, who could note coming events, and he was a man of much wit, who could, like the ancient oracles, utter sentiments ambiguously expressed that could be interpreted in more than one way. The alleged prediction of the king's death was probably meant as only a weather prognostication, but as it proved incorrect, and as the tidings came very opportunely that the king had been killed, not that day be it remarked, but a night or two before, it established his character as a prognosticator of coming events. The poet was thenceforth regarded as having communication with supernatural visitants, and the legend relating to his intercourse with Fairyland is still well known on the Borders.

Reclining one day on Huntlie bank, on the slope of the Eildons, Thomas spied a "ladye bright

Come riding down by the Eildon Tree.

"She sprinkled the field both here and there—
 Said heere shal many corpes lie;
 At yon bridge, upon yon burne,
 Where the water runnes bright and sheene,
 There shall many steides spurne,
 And knights die throw battles keen."

It is explained that the ladye was the Queen of Heaven; the fowl, Saint Michael; the two knights, St. Andrew and St. George; and the whole scene symbolised the Battle of Flodden. In like manner was the Battle of Pinkie described; and at the close the union of the two countries is foreshadowed as follows:—

"When al these ferlies was away,
 Then saw I non but I and he,
 Then to the berne couth I say,
 Where dwels thow, or in what countrie?
 Or who shall rule the Ile of Bretaine,
 From the North to the South Sey?
 A French wife shall beare the son
 Shall rule all Britain to the sey,
 That of the Bruce's blood shall come
 As neere as the rint degree.
 I franed fast what was his name,
 Where that he came, from what countrie.
 In Erslingtoun I dwell at hame,
 Thomas Rymour men calls me."

The book published by Andro Hart has been subjected to unsparing criticism, especially by Lord Hailes, and it has been proved pretty clearly that the alleged prophecy regarding the union of the crowns was not uttered by the Rhymer at all, but was composed to promote confidence in the duke of Albany, and was subsequently applied to James, in whose person the crowns were united. No doubt is now entertained that the alleged book of prophecies is a comparatively recent fabrication, and that the different compositions have an intimate bearing on the political occurrences of the sixteenth century. How many of the traditionary prophecies ascribed to him were uttered by Thomas of Ercildoun it is impossible to say; but there is no reason to doubt that he was a man of mind and influence, nor can we doubt that he happened oracularly to predict the death of Alexander III.

Little more than a mile south-west of Earlstoun is Cowdenknowes or Coldingknowes, once owned by the Homes, an off-shoot of the earls of March. The present mansion belongs to the sixteenth century, and is in the baronial style of the Elizabethan period. Carved in stone above the principal entrance are the letters—S. J. H. V. K. H. 1574. The

initials represent Sir John Home and Violet Ker Home, his wife, one of the Cessford Kers. In a room of this mansion Queen Mary spent a night on her way to Jedburgh and Hermitage, and a chestnut tree near the house is said to have been planted by her royal hands. On the stone casement of the window of Queen Mary's room is an inscription partially effaced, but the words still decipherable are the following :—

“Feir God, flee from synne,
And mak for ye lyfe everlastyng.”

Close to the mansion is a square tower on which is carved the date of its erection, 1555. On the banks of the Leader, less than a hundred yards from the mansion, are the remains of a fortalice or more properly a dungeon, in a very peculiar position. It is strongly built in the face of a bank overlooking the river, and the roof of the tower is only level with the top of the bank. In the upper storey are two dark rooms, in one of which is a trap-door, through which possibly prisoners have been let down in the olden time into the dungeon below. Regarding the age of this fortress there is no record.

The mansion of Cowdenknowes is beautifully situated on the left bank of the Leader, and is surrounded with abundance of trees, both indigenous and exotic. On the western slope of the hill above, there once flourished in great luxuriance “the broom of the Cowdenknowes” that has been so justly celebrated in song and ballad. Some of this broom is said to have been twenty feet high, with a stem eight inches in diameter. Gradually it became circumscribed with advancing cultivation, while the thick stems were carried off and converted into ornaments; and the last of it was killed by the severe frost in the winter of 1861-2.

Towering above Cowdenknowes on the south side is the peculiar conical peak known as the Black Hill, on the top of which are the remains of an Ancient British fortlet, around which three different rampiers are discernible. A number of hollows may be seen in which the primæval Britons have apparently dwelt in the far distant past. The summit is also encircled by an old British trackway, on which there is much vitrified stone, but there is no appearance of any vitrified fort.

*List of Additional Fungi observed in the Neighbourhood of
Jedburgh.* BY ARCHIBALD JERDON.

AGARICUS (LEPIOTA) ACUTESQUAMOSUS. (A. Mariæ, Eug. Fl.) On bare soil, among evergreens. The specimens found by me had the gills much *branched*, which is not the case in the normal form of the plant.

A. (TRICHOLOMA) ALBO-BRUNNEUS. In woods. This species occurred in some abundance this autumn (1866), generally under beech trees.

A. (TRICHOLOMA) CARTILAGINEUS. On grass, by road sides, &c. Not uncommon.

A. (TRICHOLOMA) SULFUREUS. In dry woods. Not common.

A. (TRICHOLOMA) LASCIVUS. On grass, under trees, growing in rings. Pileus at first, quite white

A. (COLLYBIA) ACERVATUS. On grass, under trees, near stumps. Not common.

A. (OMPHALIA) INTEGREGELLUS. On a dead stick.

A. (ENTOLOMA) NIDOROSUS. In fir woods. Not uncommon.

BOLBITIUS FRAGILIS. On grass, near haystacks, &c. Not uncommon.

CORTINARIUS CÆRULESCENS. In woods. Rare. A beautiful species.

C. TORVUS. In woods. Common.

C. LEUCOPUS. In woods. Not uncommon.

CANTHARELLUS CRISPUS. On dead branches of beech. Rare.

A. J.

C. LOBATUS. On decaying mosses. Not uncommon.

POLYPORUS CÆSIUS. On a trunk of spruce fir, lying on the ground. Rare.

P. SPUMEUS. On stumps of trees. Not uncommon.

DÆDALEA UNICOLOR. On dead trees, &c. Rare in this district, though apparently common elsewhere.

THELEPHORA SEBACEA. On the ground, on crusting stumps, twigs, &c. Not uncommon.

TYPHULA GREVILLEI. On dead leaves, twigs, &c. Not uncommon.

MELANOGASTER AMBIGUUS. On the ground, under an oak tree. Remarkable as being one of the few Hypogæous Fungi which are found in Scotland. A. J.

ASTEROMA PRUNELLÆ. On living leaves of *Prunella vulgaris*.

A. VERONICÆ. On living leaves of *Veronica officinalis*.

CORYNEUM PULVINATUM. On dead branches of lime.

CLADOSPORIUM FASCICULARE. On dead stems of asparagus.

PEZIZA CEREÆ. Sow. On bare ground, under a spruce fir. Rare.

P. CORTICALIS. On bark of living honeysuckle.

P. LEPTOSPORA. B. and Br. n s. Cups at first hemispherical,

then flattened, externally lurid from the minute scattered black flocci; within white or yellowish, sporidia filiform, very long. On rotten wood, sparingly. A. J. A curious species, remarkable for its very long sporidia, which are ejected elastically.

P. RESINÆ. On the resin of fir trees. Rare.

HELOTIUM SUBTILE. On dead fir leaves.

H. FRUCTIGENUM. On beech nuts.

H. PRUINOSUM. Jerd, n. s. Minute, white, sessile, or very shortly stipitate, pruinose; sporidia elongato-cymbiform, 3-4 nucleate. On various species of Sphæriæ, as Valsa Prunastri, &c. Not common. A. J.

H. OCHRACEUM. On dead bark of spruce fir. Not common.

STICTIS LECANORA. On dead branches of willow. Rare. A. J.

HYPOMYCES AURANTIUS. Tul. On decaying Polyporis squamosus. Rare.

HYPOXYLON USTULATUM. On a dead stump. Rare in this district.

VALSA SUFFUSA. On dead branches of alder. Common.

V. TILIAGNEA. On dead branches of lime. Common.

DOTHIDEA MELANOPS. Tul. On dead branches of beech. A. J.

SPHERIA STERCORARIA. On horse dung.

S. APOTHECIORUM. On Parmelia subfusca.

S. ARUNDINIS. On reeds. Common.

S. SALICELLA. On willow. Common.

S. BUFONIA. On oak branches. Rare.

S. APPENDICULOSA. On dead bramble. Rare. Sporidia very beautiful.

S. ALLIARÆ. On Erysimum Alliaria. Common.

Additions to the Muscology of the Eastern Borders. By
ARCHIBALD JERDON.

GYMNOSTOMUM MICROSTOMUM. On hedge banks. Rather common.

POTTIA CRINITA. On the sea-banks, near Old Cambus. Mr. Hardy.

ANACALYPTA LANCEOLATA. do., do.

ZYGODON LAPPONICUS. On a damp rock between Belses Station and Minto Crags. J. Hardy and A. Jerdon. A low station for this Alpine moss.

BRYUM ZIERII. Rocks in Henshole.

BARTRAMIA THYPHYLLA. A single patch on a dry bank near Mounteviot House.

* HYPNUM GLANEOSUM. The moss which I fancied to be this species turns out to be a pale variety of H. LUTESCENS. Since recording it in the Transactions of the Club, I have found the plant in fruit and so been enabled to determine it.

Notes on "A Mapp of King Charles his Campe or Leaguer" at the Birks, near Berwick, May, June, 1639. By ROBERT CHAMBERS, LL.D. (*Plate XIV.*)

In a work devoted to Border matters, it cannot be inappropriate to notice the site of the camp occupied by Charles I., when endeavouring to overawe the Scottish covenanters; more especially as it happens to have been denoted to us, with curious local detail, by a rare engraving of the celebrated Hollar, who seems to have followed the royal army. His Majesty's camp or leaguer on that occasion was upon an open tract of slightly undulating ground, on the right or English bank of the Tweed, opposite to Paxton, and extending southward very nearly to a farm house called the Birks, which still exists. An army raised by the covenanters, under the command of General Alexander Leslie, had advanced to Dunglass, when the king approached the Border with an army of about sixteen thousand men, thinking to terrify the Scotch into obedience without stroke of sword. Unfortunately for his calculations, his troops were ill affected to his objects,—were, on the contrary, inclined to sympathise with the Scotch,—while the covenanting army was of fully equal numbers, and animated by strong religious and patriotic feelings. He had not taken up his ground at the Birks more than five days, when it pleased him to send a large detachment, under the Earl of Holland, to break up a party of the covenanters at Kelso. It failed miserably, and performed an inglorious retreat.

Leslie then called in the Kelso party, and planted the whole of his troops, upwards of twenty thousand in number, on the top of Dunse Law, (June 5), ready to oppose the king if he should enter Scotland in force. Hearing of this movement, the king took a prospect-glass, and, walking down to the side of the Tweed, there, to his great surprise, beheld the army on Dunse Law, five or six miles distant, and, probably, from that moment began to feel that he was not to accomplish his purpose by arms. As is well known, he came to a pacification with the Scottish leaders, (June 18), and immediately thereafter broke up his camp.

In Hollar's print, we find the camp of a square form, in an angle of the Tweed, which bounds it on the north and west. The east boundary extends backwards from the Ord houses, near which there is a sort of quay for the landing of provisions from Berwick, and a ford, which had temporarily got

the name of the Market Ford. The Birks' farm buildings appear just beyond the southern line. The villages of Paxton, Ord, Langridge, and Fissick (Fishwick), appear at a little distance in various directions. The quarters for the foot, the horse, the artillery, and ammunition, all distinctly appear; also the site of the king's tents, those of his lords, and those of his guards. Along the river are seen boats, bringing provisions from Berwick. Along an oblique path through the camp, the king's coach is seen passing. All round are small redoubts, and on the south side of the Tweed is a large one, which was thrown up after the Scottish army had come to Dunse Law, when Charles began to find himself on the defensive, rather than the offensive. In company with Mr. David Milne Home, I found the remains of this redoubt, on the sloping ground, to the east of Paxton House. The inequalities of that spot had been a matter of mystery to Mr Home for many years, as there was no way of accounting for them on geological grounds; and he at once accepted the explanation thus furnished by Hollar's map. It had given us a long day's amusement to walk over the space occupied by the camp, and trace the sites of the king's tent and other objects, on ground now generally trod only by the peaceful husbandman.

Botanical Memoranda. BY G. R. TATE, M.D., Royal Artillery.

On May 24th, 1866, I ascended Yevering Bell, and re-discovered the rare *Pyrola secunda* which has not, I believe, been noticed since Dr. Johnston and Rev. J. Baird obtained two specimens in 1834. The plant grows amongst *Calluna* and *Vaccinium Myrtillus* on the north side of the hill above the oak grove, and above 300 feet from the summit.

It is confined to a small area, although in less than five minutes I observed over a hundred specimens.

In ditches near Ewart I noticed *Cicuta virosa*; in a field near Wooler, *Barbarea præox*; and at Skirl-naked *Ulex nanus*.

Plants new to Berwickshire, with Notes on their History.
By JAMES HARDY.

Having, as occasion offered, collected materials for a History of our Border Plants, with reference to their nomenclature—how it originated, and how it was applied; their introduction into the literature of science, so far as the dates can be ascertained; together with the various popular attributes, whether superstitious, economical, or literary, annexed to them; I shall, while recording recent discoveries, of which some of our rural investigators have furnished the evidence, resume the thread, which, last season, I took up in the case of *Goodyera repens*. The subject requires more leisure than I have at my disposal at present, but, perhaps, hereafter, I may be induced to pursue the subject, in such broken essays, as the odds and ends of time admit of. I duly chronicle my authorities, passing over those that add nothing to our knowledge.

1. *Potentilla verna*, L.

Hab. Netherbyres Mill, half-way between Ayton and Eyemouth. *Thomas Renton*. Mr. H. C. Watson gives "Berwick," but this is the Spindleston locality.

This was first given as an established species by Hieronymus Bock or Tragus in the Kreuterbuch, (the 1st Edit. is 1539, but I cite that of 1546), p. 192, as the least kind of "Funff finger kraut;" *minimum* of Tragus by Kyber, 1552, p. 505. It is also reckoned to be the *Quinquefolium luteum minus* of Fuchsius, Imagines, p. 359, Basil, 1545; although figured as of erect growth. There is an indication but no description of it in the text, first printed in 1542. Tragus, who is a facetious man ("jocularis homo") found the astringency of its fruit and root somewhat unpleasant; "rumpffet die zungen zussamen, nit anderst dann Gallopfell": "quod linguam commestam vellicet, non aliter atque Galla, relinquitur." Growing even on the roadsides in Germany, it next attracts Clusius's attention in his journey through Pannonia, Austria, Moravia, and Bohemia. "Nihil illo vulgatus secundum vias locis siccis et nudis." *Stirpium Pannon.*, p. 430, A.D. 1583; and *Rarior. Hist. Plant.*, II., p. 107. I may, however, mention that Sprengel, *Hist. Rei. Herb.*, I., p. 416, regards this as the *Potentilla opaca*; but "doctors differ." Thence it is transferred to the English Herbals, appearing first, but without any locality in Gerard Emac., p. 989, being inserted by the editor, Dr. Thomas Johnson, who brought it from his Cambrian journey in July and August, 1639. (*Mercurii Botan.*, Pars, II., p. 28). Thomas Willisell conveyed it to Ray from Kippax, near Pontefract, Yorkshire (*Synopsis*, 2nd Ed.,

p. 141,) and there it may still be had. (Sir J. E. Smith, Eng. Flor., II., p. 421).

It is a plant either subject to much variety or there are several species nearly allied to it. "Mutabilis planta, etsi vulgatissima, vix extricabilis," is Haller's announcement of it in his Hist. Stirp. Helvet., II., p. 48. Linnæus cites Crantz's *Fragaria verna*; but that author, Stirp. Austr., p. 74, says "Folium ubique subtus incanum," which is not applicable to our plants. But Sir J. E. Smith does not perceive "that any extraordinary difficulties attend our *verna*."

The specific title is from the "*Quinquefolium vernum minus*" of Tabernæmontanus (quoted on the faith of John Bauhin); it being a welcome herald of spring, as the student confined to a smoky city during winter is well aware of. "Bluet in anfang des Aprillen," (Bock); "Florere incipit ineunte propemodum vere," as Clusius expresses it; but more picturesquely Linnæus, by introducing its companions with it, "Floret cum Tulipa et Anemone nemorosa," makes it a symbol of life and joy.

P. verna has a wide range of distribution. It flourishes from Lapland to Carniola (Scopoli). It is very frequent in the Norwegian Alps on the side towards Norway; but it avoids the Swedish side of these Alps, (Wahlenberg, Flora Lappon., p. 146); while elsewhere in Sweden it is of common occurrence. (Flora Upsal., p. 175). It extends also to Spitzbergen and Greenland, and along the north of Asia. It is absent from the south of Spain and Portugal. (Link in König's "Tracts," p. 70).

2. *Arabis hirsuta*, L.

Hab. On the sea banks below the railway station, Burnmouth. *Mr. A. Falconer*. Minto Crags and elsewhere, Roxburghshire. *A. Jerdon, Esq.*

Scopoli, in the Flora Carniolica, II., p. 30, first arranged this with *Arabis*. It was previously a *Turritis*. As a *Turritis* of Petiver it obtained the English name "Daisy Tower Mustard." Caspar Bauhin called it *Erysimo similis hirsuta*, Prodrômus, p. 42, cum fig., and Pinax, p. 101; whence comes the Linnæan name *hirsuta*. C. Bauhin gathered it on the walls of Basil, &c. His brother John also found it on the fortifications of several mediæval fortresses; and records the facility with which it occupies each "coign of vantage" on walls of more recent erection. Hence he named it *Barbarea muralis* (Hist. Plant., II., p. 869, 870); translated in the English name "Wall-cress." He had the merit first to describe the plant in his Libellus de Plantis a Sanctis denominatis, p. 9. But it had previous observers. Among the remains of Conrad Gesner, there is an Icon, Tab. III., 115 of his Opera Botanica, edited by Schmiedel, and named *Delphinium* and *Myagros sylvestris*, which Haller refers to it; although I think the stem is too leafy, and the leaves too much indented.

C. Bauhin also brought with him the plant from Padua, where Melchior Guilandinus, the superintendent of the Botanic Garden, a learned man, "eruditus homo" (Haller), and distinguished traveller, held the opinion that it was a classical plant, the Dryophonon of Pliny, lib. 27., c. 9. So John Bauhin (corrected in his citation) tells us. This opens up a wide field of conjecture, which, as he was singular in his belief, I shall not enter. What follows possesses more interest. Lobel in *Stirpium Observationes*, p. 104, has a *Barbarea minor*, which he identified with the "Herba S. Alberti" of the Bolognese. John Bauhin thinks this is our *Arabis hirsuta*, and that his brother Caspar ought not to have made it a distinct species, which he does in his *Phytopanax*, p. 152. But there is also a "Herba S. Alberti" of Cæsalpinus, with yellow blossoms, to which subsequently with dubiety Caspar annexes Lobel's synonym. There are at least three St. Alberts, to whom the church of Rome has granted apotheosis. The best known is Albertus Magnus, the magician, once Bishop of Ratisbon, who, in the very infancy of science, wrote a book, first printed in 1493, on "the virtues of herbs, stones, and beasts." Although the historians of botany load the philosophic saint with nothing but opprobrium; "compiler superstitiosus," "vir barbarus," (Haller); "ineptus homo," (Sprengel); "hæc legat qui bonus horas male collocare volet," (C. Gesner); yet that rude work, made up of all kinds of opinions, exercised considerable influence on the future nomenclature of plants, being the ground-work of several of those herbals, that long after formed the guide-books to vegetable remedies for the alleviation or cure of disease. His special day is Nov. 15, being that of his decease. The plant then can scarcely commemorate him, as he has a rival, in a certain patriarch of Jerusalem, who claims April 1, as a holiday, when the plant will be getting pretty vigorous in the mild climate of Italy.

Perhaps we are not wrong in thinking that John Ray added this plant to the British Flora; he was at least familiar with it as growing in the west and north of England. He had, however, been shown it under the name of *Turritis minor*, which is Petiver's name, and that which was ultimately adopted in the 3rd edition of the Synopsis. Neither Parkinson nor Morison knew it as British, although figures of it are given in their works.

It is a widely diffused plant, not only throughout northern and middle Europe, but extending across North America to Kamtschatka. (Don's Dict. Gard., I., p. 162). Dr. Withering found it in 1792-4, near Lisbon. (Miscellan. Tracts, I., p. 273).

† 3. *Erysimum Cheiranthoides*, L.

Hab. Warlaw-bank among stubble, on a piece of ground recently torn out from heather, and sown off in grass this year. *J. Anderson*. This is an interloper, probably introduced with the clover seed. The portion of ground alluded to was lately "black heather," and is one of the barest spots in Berwickshire.

Lobel is the first to figure it in his *Stirp. Observationes*, A.D. 1576, p. 112. It was then cultivated in the English and Flemish gardens. He remarks "Iisdem quibus Cameline oritur natilitiis," signifying that the conditions of its birthplace were similar to those of *Camelina sativa*, of which he had just been treating. The title *Cameline*, *Myagrum alterum*, *Thlapsi effigie* was affixed to the figure issued in his *Icones*, 1581, and gave rise to Gerard's *Camelina*, and that of Dale's *Pharmacologia*, a name to which it had no right. Parkinson in his *Theatrum Bot.*, p. 869, A.D. 1640, knew it as of wild English growth. "It groweth in many places of our own country, and being once brought into the garden, and there suffered to shed the seed, it will come up yearly again of itself." Gerard, *Emac.*, p. 273, conferred on it the term "Treacle Worm-seed;" Parkinson that of "English Worm-seed." The true "Worm-seed" of the *Materia Medica*, is *Artemisia Santonica*, L. (Stokes' *Botanical Materia Medica*, IV., 188): *Lumbricorum semen vulgare*, of J. Bauhin and others. "White Worm-seed," was *Corallina officinalis*. (Lewis, *Materia Medica* by Aikin, I., p. 366, compared with the Index). "The seed of *Camelina* stamped and given to children to drink, killeth the worms, and driveth them forth." (Gerard). Although a mistaken, it appears to have been a genuine English name. It is "called in many places Worme seed," "and is much used by the countrey people where it groweth to kill the wormes in children, the seede being a little bruised and given in drinke or any other way." (Parkinson). "Semen hujus in plurimis Angliæ locis contra vermes puerorum usurpatur, quod tsum et potui cujuslibet liquoris mistum, administratur pueris, quorum stomacho et intestinis vermes sunt infesti, unde a muliereculis indigenis abusive *Worm-seed* appellatur." Morison, *Hist. Ox.*, II., p. 229. Dalechamp was aware of its intensely bitter properties. "Saporis in tota planta et omnibus partibus amarissimi." *Hist. Gen. Plant.*, I., 647, Lyons, 1587. Sir J. E. Smith says "it is one of the ingredients of the nauseous Venice Treacle." Tabernæmontanus first made the plant an *Erysimum*. If we correctly understand John Bauhin, Gerard in his first edition had mistakingly taken it for the *Erysimum* of Galen and Theophrastus; a title also under which it occurs in Ray's *Historia*. In Ray's notice in the *Catalogus Plantarum circa Cantabrigiam*, p. 26, A.D. 1660, is recorded its first special locality. "In the osier holts about the bridge at Ely abundantly, and in all the other osier grounds by the river side there." Sir Robert Sibbald introduced this as Scottish in his *Prodromus*, p. 39, but without locality. Neither had Lightfoot seen it. Both he and Sir W. J. Hooker make Sibbald say "in corn fields, but not abundant." He has no remark whatever. Mr. H. G. Watson, records it, however from Sibbald's ground, "very sparingly by the Forth, some miles west of Queensferry, probably brought by coal-vessels, 1831."

New Botanist's Guide, II., p. 449. On Dr. Walker, professor of Natural History, Edinburgh, rests the honour of fixing it in Scottish soil; "at the head of Loch-na-gaul in Mull." Hooker, *Flora Scotica*, p. 202. In recent times it has been recorded for Morayshire; but not free from doubt as to its indigenous claims.

The great resemblance of this plant to the Wall-flower early caught the botanist's eye. If C. Bauhin is correct, and he has Sprengel as a follower, the *Viola lutea sylvestris* of Tragus, is intended for it; but that good man furnishes no apt tokens whereby to let it be recognised. Wall-flowers were the Violets of those far-off times—that is more than three hundred years ago. Catching the same similitude, Tournefort, *Inst. Rei Herb.*, 224, named it "*Turritis Leucoi-folio*;" and some naturalists have even classed it, or varieties of it, as species of *Cheiranthus*, e.g., Hudson, Lamarck, Willdenow. We thus see how the "*Cheiranthoides*" of Linnæus originated.

It is very frequent in the Swedish fields; (*Hort. Cliff.*, p. 337) and far north into Lapland, but more sparingly. (Linnæus, *Wahlenberg*). Linnæus in the *Flora Suecica*, Ed. 2, p. 234, accounts it a pest. "*Vitium est agrorum*." C. Bauhin did not fail to remark its abundance in corn fields in the duchy of Wirtemberg: Germany may be reckoned its head quarters. (*Roth. Flor. Germ.*, I., p. 282). Pallas, in 1763, found it on the Steppes in the south of Russia. (*Travels*, I., p. 155., 162.) It grows also in "Siberia, and North America; but it does not grow further south than the south of France." (Sprengel, in the *Philosophy of Plants*, p. 407).

4. *Corallorhiza innata*, R. Brown.

Hab. I have to thank William Shaw, of Gunsgreen Hill, for this very interesting addition to the Flora. He came upon it in July, in a wood on the roadside between Alemill and Whitfield; most likely a moist wood on a tenacious clayey soil.

The *Corallorhiza* was discovered by Clusius in August, 1578, at the base of Mount Etscher, in a gloomy fir wood, where scarcely any other plant but itself was produced. *Stirp. Pannon.*, p. 429. Five years had elapsed, when, under the guidance of a huntsman, he found it flowering in August, under firs and beeches, on the Sneberg; and then again in June, 1589, in a wood near Frankfort-on-the-Maine; in both instances much more copiously flowering, than in the dwarf plant he figures in his *Pannonia*, and *Stirp. Hist.*, II., 120. His name *Dentaria coralloide radice* furnished the key note to its future nomenclature. "*Admiranda naturæ*" remarks Mentzel in his *Pugillus*, "in hac plantula quoque observantur, dum corallia rubra et colore et specie externâ in hujus plantulæ radice efformata ad vivum exemplar conspiciuntur." Thence arose Rupp's *Orobanche spuria seu Corallorhiza*, Rupp, *Jenens.*, Ed. 1., p. 284. Rupp's genus was defined by

Haller and Scopoli. Crantz is angry with Linnæus for not adopting Rupp's name, and substituting *Neottia* instead, which he attributes to invidious feelings. "Sed nemini honorem tribuit invidia, nisi adulatori." Stirp. Austriacarum, p. 464, 2d. edit. But the rustic plant-hunter got justice in the long run.

It was unknown in Britain till the Rev. J. Lightfoot obtained it in marshy woods near the head of Little Loch Broom, in Ross-shire. (*Flora Scotica*, II., p. 523). Several localities have been added since; the nearest to us is from the Edinburgh district. Sir J. E. Smith was "favoured by Mr. Edward John Maughan, a young botanist of Edinburgh, in the summer of 1807, with a copious supply of specimens and living roots, gathered among willows in a peat bog, a little to the south of Dalmahoy hill, about 9 miles from Edinburgh; some of the roots blossomed in my garden." (Linnæus' Tour in Lapland, I., p. 223). It is also found on the west side of a peat bog near Ravelrig toll, among Salices. See English Flora, Hooker's *Flora Scotica*, and Greville's *Flora Edinensis*. Linnæus' first discovery of it is worth recording. "In the island of Longœn, three miles from Old Pithœa, I was lucky enough to find growing under a spruce fir the coral-rooted Orchis in full bloom, (June 19), which had never fallen in my way before. It is a very rare plant, and grows so sparingly, that after finding one specimen, there is little hope of soon meeting with another." (Tour in Lapland, I., p. 223). He afterwards found reason to alter his opinion of its rarity, even in this very spot. See *Flora Lapponica*, No. 255. In looking for it, future explorers should bear in mind its love of moisture. Common in Lapland in swampy woods (*Wahlenberg Flor. Lapp.*, p. 220); "In sylvis asperis desertis, in paludibus cespitosis." (Linn. *Flor. Succ.*, p. 317); "locis spongiosis umbrosis ad paludes maximas sylvaticas," (*Wahlenberg, Flor. Ups.*, p. 293).

In Switzerland it is found everywhere in fir woods, on the testimony of Haller. Pallas observed it on the south-west coast of the Crimea, in 1794. (*Travels*, II., 174).

5. *Goodyera repens*, L.

"I met with a plant of it in Ramshaw Wood by the road to the mill on the south side of Wark Burn in Tynedale." Wallis, *Hist. of Northd.*, p. 232. Dr. Thos. Johnson, thought also he had found it in one of his simpling journeys, (*Merc. Bot.*, I., p. 55); but, like Wallis's plant, it needs confirmation.

† 6. *Geranium striatum*, L.

Hab. "It grows abundantly for about two yards distance on the banks of a ditch near Running-burn farm, Stitchell. When I got the plants there were hundreds of specimens. I found it growing the year before in the same circumscribed space." *Rev. J. C. Meiklejohn*. Most likely this is a garden out-cast; it is a common border plant, and propagates itself readily by shedding its seed. It is a native of Italy and Greece.

It is the *Geranium Romanum versicolor sive striatum*, of Parkinson's *Paradisus*, published in 1629. He makes no remark about it; neither does Morison who copies him. Dr. Thomas Johnson in his journey of 1634, saw it growing at Bath, in the garden of George Gibbs, a very worthy man. ("honestissimus vir"). He calls it "*Geranium Romanum variegatum*." The Leyden botanic garden possessed it in Boerhaave's time. (*Index alter Plantarum*, I., 265, A.D. 1727).

7. *Sagina ciliata*, Fries.

Mr. J. G. Baker, of Kew, in July, pointed out this to me, in the pasture, near the side of Wooler water, not far from the end of the wood bridge, at Wooler. Professor Oliver first gathered it in that vicinity. In October, I met with it by the side of the same stream, in the Langleyford vale, considerably above Careburn Bridge, on ground that both Mr. Baker and I had travelled over in July; so easy it is to miss minute plants where we don't expect them—in old ground. I have examined the plants growing at the slate quarry, Oldcambus, recorded as *S. apetala*. They are of late autumnal growth, and not in a good state, but they have a more upright habit, and the capsules don't "hang the pensive head," like many of those in *S. ciliata*. I take the Berwickshire plant for *S. apetala*, till fresh specimens of both are compared. "*Saginæ in vivo observandæ sunt nec ad specimina sicca determinandæ*." Fries, *Novitiæ Floræ Suecicæ*, Ed., 2, p. 60.

8. *Cistopteris dentata*, Dicks.

Hab. "Cockburn Law."

Mr. Dickson first separated this from *C. fragilis*; his specimens being "discovered in clefts of rocks in the Highlands of Scotland." (Withering's *Arrangement*, III., p. 776). It is plentiful there, according to Gardiner's *Flora of Forfarshire*, p. 220. "The extreme forms of these beautiful and delicate ferns, i.e., *C. fragilis*, and *C. dentata*, appear distinct enough to the eye, but fronds with pinnæ and pinnules of all intermediate shapes occur, so that one feels it often difficult which name to apply." (Wm. Gardiner). A plant of this now in Mr Wightman's rockery, was found by him somewhere in the Wooler district.

9. *Cistopteris angustata*, Smith.

Hab. "On an old wall near Lintlaw."

This the *Polypod. rhaeticum* of Dickson was also first detected by him in the Scottish Highlands. I have compared the disputed figure of Clusius, Pannon., p. 706, and Hist., 2., 212, and reproduced in Gerard Emac., 1142, and agree with Sir J. E. Smith that the author intended this plant. It was therefore known before 1583. Both it and *C. dentata* are now considered varieties of *C. fragilis*. Fronds of both were sent by a fern cultivator, but his name has not transpired.

These are not all the plants that have come to light during the past season. Others are reserved for better investigation; the return of new Mosses is numerous. I shall merely, for the present, append a few

New Localities for Border Plants.

Thlapsi arvense. Noticed in fields near Fishwick and near Hallydown.

Saxifraga granulata. In flower in July far up the southern Bizzle ravine. Dr. Johnston saw it in Dunsdale.

Chrysosplenium alternifolium. Nearly in the same locality with the last.

Cnicus heterophyllus. On the wet ground below the rocks at the entrance to the Bizzle, on the north side.

Vaccinium Oxycoccus. Horton moss.

Galeopsis Ladanum. Cockburn Mill on the Primrose Hill side of the Whitadder.—*John Anderson.*

Epipactis latifolia. Marshy plantation near Fishwick, some of the plants nearly two feet high; one plant at Pistol Planting.—*Mr. Falconer.*

Listera ovata. This, I am told, is common in woods near Fishwick. I found a single plant this season on the Common Burn, some way below where the old road crosses it, S.E. of the Shepherd's House. In a section of the clayey bank where this grew, just above the burn, various oval black bullets about the size of beans or cherry stones, were attached at intervals to a black creeping root, which I failed to trace to its source. They consisted of a white nucleus of a sweetish but not pleasant taste. They were not earth nuts, nor anything I had seen before. *Equisetum sylvaticum* was the only creeping-rooted plant that I could see near them.

Listera cordata. Among the long heath on the corner of Cheviot, turning to Dunsdale. In May, Mr. Boyd and I found *Ranunculus auricomus* on that part of the hill between Dunsdale and Southernknowe.

Habenaria viridis. I have seen specimens from a marshy field near Ayton; and it is said also to occur near Lauder.

Poa Balfouri. Mr. Baker found this when we visited Heathpool together in July.

Polypodium Phegopteris. As Northumbrian localities for this, I may mention Cockenheugh, the mouth of Henhole ravine, the Bizzle, Dunsdale, and among rocks on the west side of Care Burn.

Miscellanea Zoologica. By JAMES HARDY.

1. *Acmaea testudinalis*. Happening to be at Siccar Point when the tide was far out, I took the opportunity of looking for the *Acmaea* at the extreme outer edge of the great fissure opposite the mouth of the cavern, where the *Laminariæ* grow from the sides of the rocks, and found it in considerable abundance, and of a large size, clinging to the rocks. It was only where the sea scarcely ebbs away that it occurred. Some time later, I looked for it at Greenheugh Point, and obtained it there also in pools, sometimes intermixed with *Lottia virginea*. The rock here is red sandstone, that at Siccar is greywacke. It probably occurs all along the coast, if looked for in the proper place.

2. *Early departure of the Martin*. By common consent nearly the whole body of Martins left during the two very wet and stormy weeks in the end of July. The reason appeared to be that the rain washed down their nests and drowned many of the recently fledged young; I observed several instances of this, and was told of others. Only two pairs lingered among the cliffs that had been stocked this year with considerable numbers, and were not remarked amidst the solitude made by the departure of so many nimble wings, till the 16th of August. On the 24th of September I heard the chatter of their brood, and on the 26th saw a young one take its flight from the nest. The two families left together about the 29th. I saw the Swift for the latest on the 25th August, but did not pay attention to the swallow.

3. *Annoyance occasioned by Calandra Granaria at Alnwick*. Mr. Tate in October sent me some beetles infesting three cottages in Canongate, Alnwick, above which is an old granary. "Beds, walls, and furniture are covered with them, and they sting like the prick of a needle." They proved to be the Grain Weevil, *Calandra granaria*. These beetles are furnished with a slender sharp proboscis, and it seems they had mistaken human beings for wheat. I asked my friend Mr. Bold, who has much experience about corn in granaries, if he was aware of this propensity, and he writes: "Our men used to say that Corn Weevils did bite, and hard too." Some observations as to how the Weevil may be diminished in granaries, were given by Mr. Bold in the First Volume of the "Tyneside Naturalists' Club's Transactions." "Experience teacheth us that there is not so good a remedy to destroy the Wyvell, as is the often fanning and winnowing in Summer." Barnabe Googe of Husbandrie, A.D. 1572.

Miscellanea Geologica, for 1866. By GEORGE TATE, F.G.S.

Plants and animals observed at the meetings of the Club are noticed in the proceedings; but it is not less in accordance with the original design of the Club to record observations made on the strata beneath the surface and on the organisms entombed in the rocks. As less has been done in this department of Natural History than in others, there lies open a wide field of research, which, if properly cultivated, may yield new and interesting results. Especially in the districts where coal has been worked, valuable information may be gathered; for many of the pit sinkings furnish exact accounts of the succession of the strata, of which we from other sources have but imperfect information. From one district I shall give sections; but there are many others, which, if printed, would prove useful guides in further researches into our mineral treasures.

EGGLINGHAM.

Though the hills around Eglington and Bewick look barren of geological information, yet they are not devoid of interest, especially now, when the question is keenly discussed—how long will our coal fields last? for over this district are spread several coal seams, of which little has been recorded. The strata here belong to the mountain limestone formation, which in Northumberland (exclusive of the rocks forming the Tuedian group), has a thickness of about 2600 feet; but this mass of strata may be arranged in two divisions, both belonging to the same era, and having certain organic forms in common, yet each marked by differences, partly organic and partly mineral, by which the one may be distinguished from the other. The *upper* division, including all the beds from the base of the millstone grit to the base of the *Dun Limestone*—the lowest limestone of any value—has a thickness of about 1700 feet. This division is chiefly distinguishable by the interstratification of many good, workable, and thick beds of carbonate lime among alternations of sandstones, shales, and coals, and by the large series of marine organisms connected with the calcareous strata. Though some coal seams of fair quality occur, and two, the Shilbottle and Licker coals, are of superior quality, yet the others are generally poor and thin. This *upper* division is on the same zoological horizon as the lower or scar limestone of Yorkshire, for it yields such organic forms as *Solemya primæva*, *Posidonia Becheri*,

Sanguinolites iridoines, and *sulcatus*, *Cardiomorpha oblonga*, &c. Of limestones there are upwards of twenty different sills, from 1 foot to 30 feet in thickness, and having an aggregate thickness of more than 200 feet; this division might, therefore, be designated *Calcareous*.

The *lower* division, from the base of the *Dun Limestone* to the top of the *Tuedian* group, has a thickness of about 900 feet; and it is especially marked by the number, thickness, and quality of its coal seams. Here we have the following eight seams of workable coal, in descending order; viz., the *Fawcet* or *Falset Coal*, about 40 feet below the *Dun Limestone*, is from 18 inches to 3 feet 4 inches thick; the *Scremerston Main Coal* is from 2 feet to 4 feet thick; the *Stoney Coal* is from 1 foot to 3 feet 6 inches thick, but of poor quality; the *Main* or *Cancer Coal* is from 2 feet to 7 feet; the *Three-quarter Coal*, of inferior quality, is from 2 feet to 4 feet; the *Cooper* or *Cowper Eye Coal*, one of the best for domestic use, is from 17 inches to 3 feet; and the *Wester Coal* from 3 feet to 4 feet 6 inches thick. There are a few limestones in this division; but they are thin and generally impure, and the aggregate thickness is only about 20 feet. To this division we may give the distinctive name of *Carbonaceous*. Some of the *Marine* organisms of the *Calcareous* division are extended into this; but they are few in number. In the shale beds there are remains of ganoid fish, accompanied by *Myophoria*, *Anthrocomya*, *Aviculo-pecten*, *Entomostraca*, and *Lingula squamiformis*, forms generally associated with coal seams. The marine conditions, so marked in the *Calcareous* division, appear dying out; and there is an approximation to those which prevailed when the upper coal measures were deposited.

To this *Carbonaceous* division, the strata around *Eglingham* belong, but much dislocated by faults; the great sandstone beds, belonging to the formation, have been thrown up into high hills and long ridges, rising about *Eglingham* and *Bewick*, from 400 to more than 800 feet above the sea level, the highest point in the range being *Ross Castle*, which reaches an elevation of 1000 feet. From these disturbing causes, the coal seams are not so productive in this district as in the more northern portions of the field. At *Tarry* and at *Bannamoore*, both near *Eglingham*, two coal seams have been worked. The following is a section of the *Bannamoore* pit:—

					ft.	in.
Red Clay	,	,	,	,	5	0
Yellow Sandstone	,	,	,	,	20	0

	ft.	in.
Shale , , , , ,	2	0
Coal disturbed , , , , ,	0	8
Shale , , , , ,	2	0
Sandstone , , , , ,	2	0
Hard and soft Shale , , , , ,	7	0
Limestone impure , , , , ,	1	3
Grey Sandstone , , , , ,	14	0
Thills (hard beds intermediate between Sandstone and Shales) , , , , ,	3	0
Limestone , , , , ,	4	0
Shale , , , , ,	0	3
<i>Craw Coal</i> (with a hard Stone of 2 or 3 inches in the middle) , , , , ,	2	0
Shale , , , , ,	0	6
Sandstone and Slaty Sandstones , , , , ,	25	0
Coal , , , , ,	0	2
Shale and Slaty Sandstones , , , , ,	4	0
Impure Limestone , , , , ,	0	6
Thills and Shales , , , , ,	5	0
Coal with partings , , , , ,	0	10
Thill , , , , ,	2	0
Little Limestone, the lower part 1 ft. 8 in. is worked for Lime ; it contains <i>Productus semireticulatus</i> , , , , ,	3	2
Blue Thills , , , , ,	2	6
<i>Main Coal</i> , or <i>Cancer Coal</i> , now worked, viz. ft. in.		
Coal , , , , 0 6	2	8
Shale , , , , 0 6		
Coal , , , , 1 8		

Shale

General dip, N.E.

There is a similar section two and a half miles northward from Bannamoor, at Houghterslaw, where the *Main Coal* is worked, in a wild and desolate moorland, the disturbed strata dipping north-eastward. The *Main Coal* here is fifteen fathoms below the surface.

	ft.	in.
Clay, Thills, a thin Limestone, and Shales ,	30	0
<i>Craw Coal</i> , viz., Coal, 15 in.; Stone, 24 in.;		
Coal, 9 in.; variable in thickness and poor in quality, and not worked here ,	4	0
Shale , , , , ,	0	6

	ft.	in.
Sandstone, coarse at top, but finer at bottom	15	0
"Grey beds" or Slaty Sandstones , ,	24	0
"White Metal," with a coal called the Ten-Inch Coal, for 6 inches to , ,	3	0
Hard Sandstone , , , ,	4	0
"Black beds" or Calcareous Shales ,	2	0
Limestone, bad , , , ,	3	0
Greenish Shale , , , ,	0	6
Hard Sandstone , , , ,	1	3
<i>Main Coal</i> , viz., Top Coal, 6 in.; Metal band, 6 in.; Bottom Coal, 17 in. , ,	2	5

The faults over these moor lands usually run from north-east to south-west; one at Hagden throws up the strata 54 feet on the south side.

This *Main Coal* was worked some years ago, on high moorland, at Lemmington, five miles southward of Bannamoor, at a depth of from 120 to 160 feet below the surface. It is there from 2 feet 2 inches to 2 feet 7 inches thick, with a stoney band of 2 inches. Thin beds of limestone are in the section, amounting in all to about $4\frac{1}{2}$ feet; but connected with them are fossiliferous shales of some interest, containing in the under layers such marine organisms as *Orthoceras cylindraceum* (Flem.), *Bellerophon hiulcus*, (Phil.), *Pleurotomaria sulcatula*, (Phil.), *Aviculo-pecten duplicostatus* and *segregatus*, (McCoy.), and very large specimens of *Lingula squamiformis*, (Phil.), with the shell well preserved, and showing the muscular and pallial impressions of this Brachiopod; in the upper layers are *Lepidodendra* and stems of reed-like plants; indicating the same transition from marine to estuarine or fresh water conditions as are seen in the Budle and Lammerton shales. The strata here are much broken by faults, and dip at a high angle in various directions, but generally towards the east.

Different names are given to the same coal in different localities; but it is sometimes difficult to identify their sameness, because the coals vary in quality, and there is, too, a difference in the thickness of the intervening strata in different parts of the coal-field. It seems, however, pretty certain that the Main Coal at Eglingham is the same as the Cancer Coal of the Berwick district; at Etal and Ford it is called the Main Coal. It is probable, too, that the Craw Coal is the equivalent of the Scremerston Main or Black Hill Seam, for in both there are nodules of sulphate of iron which deterior-

ate their value. There is, however, a difference in the distance of these seams from each other; at Eglington, the *Craw* Coal is only 8 fathoms, but in the north it is as much as 18 fathoms above the *Main* Coal. The lower and more valuable seams have not been worked in this district; there yet remain untouched the Three-Quarter Seam, the valuable Cooper Eye Seam, and the Wester Coal.

The *Craw* Coal and *Main* Coal are neither so thick nor so good in quality at Eglington, as they are in the neighbourhood of Berwick; but they have been worked here, on a small scale, where the strata are disturbed, and not far from their outcrop. Further towards the dip, and at greater depths, they will probably be in a better state. There seems, therefore, to be a considerable quantity of coal stored up in the moor lands of Northumberland; for the future wants of the country; and, doubtless, the time will come, after the richer and more accessible seams of the coal measures have been exhausted, when these barren moor lands will present a busy population, actively engaged, with the aid of improved mechanical appliances, in the extraction of coal, to enable Britain to keep up her pre-eminence as a manufacturing country.

A more recent deposit deserves a notice. Among the hills, in the valley down which Eglington Burn flows, and at an elevation of about 400 feet above the sea level, there is a deposit of sand and gravel, about 30 feet in thickness, extending over a considerable area. The surface, with here and there rounded knolls, shews the moulding action of water; and the gravels, chiefly porphyry from the Cheviots, are rounded and smooth. Evidence is thus given, that at a comparatively recent period the district around had been covered with water at least 400 feet above the present level. But subsequent to that time, there had been a small lake among those hills some 20 feet in depth, for the margin is traceable in the steep face of the gravel and sand deposit on its north-west side.

EARLSTON.

In the Black Hill, near Earlston, and in several other parts of Berwickshire and Roxburghshire, there is a red sandstone reaching an elevation of from 600 to nearly 900 feet above the sea level; and yet having a stratification nearly horizontal. So long as organisms were undiscovered, it was regarded as belonging to the new red sandstone era. To determine its age was one of the objects of the Earlston meeting.

The Black Hill, overlooking Earlston, has an elevation of more than 1031 feet. Ascending it on the north side, porphyry was found, wherever the rock was exposed, up to its very summit—porphyry of a common type, a red felstone base with felspar crystals scattered through it, the same, indeed, as is seen in the Cheviots and Eildons, but of a later age; for while this had been erupted subsequently to the old red sandstone, it is well ascertained that the Cheviot porphyry was elevated prior to that era. On the south side of the Black Hill an instructive section is exposed, shewing upwards of twenty feet of porphyry overlying some fifty feet or more of red sandstone. A keen search for fossils was made by the members of the Club to determine the age of this sandstone, and Mr. Wood, of Earlston, was the first to bring to light an organism, which lived long ages ago when these red beds were deposited. Further researches discovered more, and slabs were opened completely covered with the large enamelled scales of *Holoptychius Nobilissimus*, a fish characteristic of the upper beds of the old red sandstone. A junction between this and the beds beneath could not be discovered; but, doubtless, it rests on the upturned edges of Greywacke or Cambro-Silurian rocks, for at a short distance westward, but at a considerably lower level, these rocks were seen in the Leader Water, highly inclined and having a direction of S.S.E. to N.N.W.

At the east end of Earlston, the pelvis and other bones of the *Cervus Elaphus* have recently been found, at a depth of twelve feet below the surface, in a vegetable deposit, above which were marly and reddish clays.

FARNE ISLANDS.

In the Proceedings of the Club, Vol. III., p. 231, there is an account of the geology of these Islands; and a notice of the glaciation of the surface of the basalt on the Stapel Island is given in Vol. V., p. 238. These Islands are almost entirely formed of basalt, part of the great basaltic whin-sill, which extends through the county from Kyles Craggs to the borders of Cumberland, and thence into Yorkshire; but in some places, as between the Inner Farne and the Noxes, and in the gut between the Brownsman and the Stapel, stratified fossiliferous rocks are enclosed in the basalt. When the Club visited these Islands in July, Mr. D. Milne Home detected another patch of these sedimentary rocks on the north side of the Brownsman. The relation of these isolated

fragments of stratified rocks to the basalt are interesting, as shewing the mechanical and chemical influence of the basalt, for not only have they been torn from the mass with which they were originally connected, but they are also altered in structure by the outburst of igneous rocks.

The more important observations of the day were, however, those which related to the passage of masses of ice over these Islands during the era when the Boulder Clay was deposited; for the same dressings, groovings, and striations, which were last year observed on the Stapel, were found to extend over the larger Islands of the Brownsman and Inner Farne; so that, indeed, it may now be considered established, that the surface of the whole of these Islands had been ground and smoothed by the passage of a powerful agent. Besides the smoothed surface and rounded little rock knolls, there are ruts or narrow hollows of some length, whose sides and bottom are smoothed and striated. From several observations over these Islands, it was found that the general direction of both ruts and striæ is from N. 30° W. to S. 30° E.; and from the slope of the dressings it appeared that the agent had moved from the northward, which is not from the land but from the sea, and nearly parallel with the coast. On these Islands a larger area of glaciated surface is exposed than in any other part of the north of England.

The notes on the important section at Cockburnspath are reserved for the present.

Notes on Ancient Relics found in the Neighbourhood of Norham, in the possession of THOMAS YOUNG GREET, of Morris Hall, Norham.

Stone Implement or Celt.

This stone celt was found in the neighbourhood of Coldstream in 1858, and its form is different from any as yet noticed in Britain. It is made of a tough and moderately hard granular stone, and its peculiarity consists in having, near the top, a hollow or neck, on the side of which are small projecting ears; from the neck it swells into a broad rounded end, which has been sharpened; it is flatter than most other celts. Its length is $6\frac{1}{2}$ inches, its greatest breadth $4\frac{1}{2}$ inches, its breadth across the neck $2\frac{1}{2}$ inches, and across

the ears 3 inches, its greatest thickness $1\frac{1}{2}$ inches. *Fig. 1* in *Plate XV.* is a half-sized drawing of this curious implement. It may have been used as a weapon or a tool either in the hand or fastened to the end of a wooden or bone haft; the neck would be useful in keeping in its place the ligature that might fasten it, and it would especially enable the hand to hold it with more firmness as a cleaving instrument. The nearest forms to this, are some stone implements found in excavations near Alexandria,* and others of a similar shape found in Kentucky, North America;† but in all these the hollow or neck is a distinct groove, which had been intended for fastening the weapon to a handle of some kind.

Iron Sword.

This sword, of an ancient type, was found in 1861 sticking out of the bank of the Tweed near Norham Boat House, about a mile above the village of Norham, after a flood which had washed away a portion of the soil. The blade is 2 feet $5\frac{1}{2}$ inches long, and 3 inches wide at its broadest part, sharpened on both sides and tapering very gradually to a point, which, however, is broken off; the handle is three and three-fifth inches long, and the space for the hand three and one-fifth inches between the guard and the cross bar at the end of the handle. Both the guard and the cross bar are of a crescentic shape—*Fig. 2, Plate XV.* The age of this sword has not yet been well determined; it is supposed by some to be earlier than Norman, and it probably is not of later date than the thirteenth century.

Leaden Rings.

Several leaden rings have at different times been found in the valley of the Tweed; a few are ornamented; but most of them are plain, and these rings have chiefly been dug up in the garden of Norham Castle, a portion of which had formed the outer moat; a few also have been found made of shale and hard sandstone. The ornamented relics are of a lenticular shape, but those that are plain are short cylinders perforated; usually they are $1\frac{1}{4}$ inches in diameter. Illustrations are given in *Plate XV.*; of the ornamented specimens—*Fig. 3* was found within Norham Castle; *Fig. 4* at Morris Hall Dene, which is in close proximity to the castle; *Fig. 5* at Horncliffe, about three miles from the castle; *Fig. 6* was

* *Proc. Arch. Inst.*, I. p. 178.

† In Mr. Tate's Museum, Alnwick.

found at Norham Castle, and shows a flat surface with concentric grooves, the other surface was convex and ornamented, but it has been much battered and obliterated, and the perforation is blocked up with a piece of stone. As most of these relics have been found within the ruined castle and castle moat they are doubtless of considerable antiquity, and the style of ornamentation, consisting of pellets and radiating ribs, having a resemblance to the figures on the silver pennies of the Edwards and Henries, their date may be some time in the fifteenth century. It is more difficult to say to what purpose they were applied. Similar forms of earthenware and stone have been regarded as spindle whorls, but there are no objects associated with our leaden relics to throw light on the subject. It is much to be regretted that nearly all the leaden rings found previous to 1858, and there were a considerable number of them, were melted down for bullets for the Handsell Monday's shooting.

T. Y. GREET.

Addition to the Flora of the District.

ANTHEMIS COTULA. Fields near Lucker Station, in 1865.
Dr. Maclagan, of Berwick.

Dr. Johnston states in the Botany of the Eastern Borders that this plant is mentioned as a common weed by Benley and Culley, but that it had never occurred to him on the Eastern Borders.

Rain Fall at Glanton Pike, Northumberland, in 1866;
communicated by FREDERICK W. COLLINGWOOD, Esq.;
And at Lilburn Tower, Northumberland; communicated
by EDWARD J. COLLINGWOOD, Esq.

GLANTON PIKE.

			Inches.
January	..	..	3.15
February	..	..	3.45
March	..	..	3.72
April	..	..	2.79
May	..	..	1.05
June	..	..	1.20
July	..	..	5.72
August	..	..	3.46
September	..	..	3.62
October	..	..	1.37
November	..	..	2.42
December	..	..	3.11
Total	..	..	35.06

Rain Gauge—Height above Ground, $7\frac{1}{2}$ inches; above Sea Level, 534.193 feet.

LILBURN TOWER.

			Inches.
January	..	..	2.461
February	..	..	3.089
March	..	..	3.669
April	..	..	1.999
May	..	..	1.010
June	..	..	0.870
July	..	..	5.261
August	..	..	3.354
September	..	..	2.106
October	..	..	1.210
November	..	..	3.092
December	..	..	1.942
Total	..	..	30.063

Rain Gauge—Diameter of Funnel, 10 inches; Height of Top above Ground,
5 feet; Above Sea Level, 300 feet.

Rain Fall at North Sunderland for the Years 1864, 1865, and 1866. Communicated by the
Rev. F. R. SIMPSON.

1864.				1865.				1866.			
Month.	Total Depth.	Greatest Fall in 24 Hours. Depth. Date.	Days on which .01 or more fell.	Month.	Total Depth.	Greatest Fall in 24 Hours. Depth. Date.	Days on which .01 or more fell.	Month.	Total Depth.	Greatest Fall in 24 Hours. Depth. Date.	Days on which .01 or more fell.
Jan.	1.13	—	9	Jan.	2.24	.45 17th	13	Jan.	1.97	.44 5th	16
Feb.	3.22	.84 12th	16	Feb.	1.56	.62 7th	12	Feb.	1.70	.28 10th	18
March	4.84	1.20 5th	12	March	1.75	.87 27th	6	March	3.00	.58 7th	23
April	1.22	.89 17th	6	April	1.19	.89 18th	5	April	1.65	.58 3rd	16
May	3.58	1.08 6th	8	May	4.47	.94 10th	14	May	.91	.41 11th	8
June	1.29	.39 9th	11	June	.54	.30 2nd	2	June	1.19	.20 12th	14
July	.47	.20 3rd	4	July	2.50	1.03 11th	11	July	4.11	1.61 31st	11
Aug.	1.58	.53 10th	8	Aug.	4.25	.67 30th	15	Aug.	2.34	.66 29th	18
Sept.	3.08	1.17 16th	10	Sept.	.65	.52 2nd	4	Sept.	2.95	.54 28th	22
Oct.	5.70	1.57 19th	11	Oct.	8.15	1.84 17th	18	Oct.	1.62	.22 30th	19
Nov.	2.73	.97 14th	10	Nov.	3.67	.93 1st	14	Nov.	2.44	.61 16th	10
Dec.	2.75	1.04 19th	13	Dec.	1.50	.41 3rd	7	Dec.	2.17	.43 6th	14
TOTAL	31.09	9.88	118		32.47	9.47	121		26.05	6.56	189

Rain Gauge—Diameter of Funnel, 8 Inches; Height of Top above Ground, 14 Inches; Above the Sea Level, 125 feet.

General Statement.

Since last year we have lost ten members by death and resignation, and the following ten new members have been elected during the year 1866:—

May 31.—Robert Fluker, M.D., Berwick.

June 28.—Robert Walker, M.D., Wooler.

July 26.—Major Briggs, Langton Tower, Jedburgh.

„ 26.—Robert Rutherford, Paradise, Kelso.

„ 26.—Patrick Johnston, Kennett Side Heads, Coldstream.

„ 26.—Buddle Atkinson, Barmoor Castle, Beal.

„ 26.—James Smail, Earlston.

„ 26.—Rev. Dugald Macalaister, Stitchell.

Aug. 30.—Rev. Manners Hamilton Graham, Maxton, Roxburghshire.

Sept. 27.—Andrew Wilson, Coldingham.

The following is a statement of the income and expenditure during the past year:—

INCOME.		£	s.	d.
Arrears received.		10	2	0
Subscriptions for 1865		49	8	0
		<hr/>		
		59	10	0

EXPENDITURE.		£	s.	d.
Paid Balance due, and				
Accounts for 1864	11	4	8	
Paid for Printing, Litho-				
graphy, &c., for 1865..	37	13	1	
		<hr/>		
		48	17	9
		<hr/>		
Balance in hand.		10	12	3

Places of Meeting for the Year 1867.

Denholm, on Thursday, , , the 30th of May.

Ellamford, „ „ the 27th of June.

Goldscleugh and Dunsdale (the Cheviots), 25th of July.

Holy Island, about , , , 29th of August;

but the precise day will be determined hereafter according to
the state of the tide.

Cornhill, , , , , 26th of September.

PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

*Address delivered to the Berwickshire Naturalists' Club, at
Cornhill, on September 26th, 1867. By FRANCIS DOUG-
LAS, M.D., President.*

GENTLEMEN,

MY first duty in addressing you to-day is to return my most sincere thanks for the very unexpected honour conferred on me last year at your anniversary meeting. Few of your members have been honoured a second time by election as your President, and when I look back to the revered names of Dr. Johnston, Mr. Selby, and Mr. Embleton, (all of whom have contributed so largely to the discoveries which our Transactions record), I cannot but feel how far inferior have been my feeble efforts in the fields of natural history, and can only attribute the occupation of the chair, for the last year, to your kindly welcome of the return to your ranks of one of your oldest members, after an absence of above 20 years in India. In the history of this club, these twenty years have produced many important and many painful changes. The former I

need not allude to as they have been all duly chronicled; but I must be allowed to express the poignant sorrow which I experienced on rejoining this club, and finding the vacant place of my much loved friend and instructor Dr. Johnston, and also of two other original members, the Reverend Andrew and John Baird, both diligent and successful cultivators of science. Their memorials have been written by skilled and friendly pens, but it would have ill become me to have allowed their names to have passed by unnoticed. Another distinguished member, Mr. Selby, of Twizell, has this year, in fullness of age, been removed from amongst us. The same friend who so eloquently depicted the character of Dr. Johnston has prepared a notice of Mr. Selby also, which will appear in our Transactions. Within the last few weeks another old and esteemed member of the club, Mr. Robert Home, of Berwick, has been gathered to his fathers. And it only remains for me, before leaving this painful theme, to regret most sincerely, that severe illness has deprived the club of Mr. Embleton's presence at its meetings. Though absent in body, his spirit is ever with us, as his interesting contributions testify.

I now proceed to give a brief account of the various meetings of the club during the past year, chiefly compiled from the careful minutes of our talented secretary Mr. Tate. The annual meeting was held at Kelso on the 27th September, 1866: present—Mr. Arch. Jerdon, president; Mr. George Tate, secretary; Messrs. William Elliot, James Cunningham, Wm. Cunningham, T. Y. Greet, F. J. W. Collingwood, J. C. Langlands, J. Hilson, Chas. Watson, Ed. Allen, William Crawford, T. Allan, C. P. Bosanquet, A. Jeffrey, Captain McLaren, R. Middlemas, Sir Walter Elliot, Drs. F. Douglas, W. Mackenzie, M. J. Turnbull, J. Paxton, A. Brown, Revs. P. Mearns, Wm. Lamb, J. Walker, R. Jones, J. S. Green, Geo. Watson, M. H. Graham, A. Davidson, and C. Eliot.

The accounts were examined and passed, and the subscription for the ensuing year fixed at 6s. The following resolutions were passed:—That the regulation, which requires the

election of new members to be made by ballot, be rescinded; that candidates for membership may be nominated at any ordinary meeting, but that the election be made at the annual meeting only, which is held in September, that three-fourths of the members then present must concur in the election, and that no strangers be present at this meeting when the business of the club is transacted.

It was also resolved, in order to prevent the accumulation of arrears, that the names of those members be struck off the roll who are in arrear of their subscription for two years, and who do not pay the same within three months after application for payment has been made by the secretaries.

The following were appointed places of meeting for 1867:—Denholm, May 30th; Ellemford, June 27th; Goldsleugh and Dunsdale, July 25th; Holy Island, August 29th; and Cornhill, September 26th.

Mr. Andrew Wilson, of Coldingham, was elected a member, and the following nominations were made:—Mr. J. A. Appleton, F.S.A., Western Hill, Durham; Mr. G. F. Twedell, F.S.A., Stokesley, Yorkshire; Mr. W. H. Morrison, Moneylaws, Coldstream; Rev. J. R. King, Carham, Coldstream; Rev. H. M. Carr, Alnwick; Rev. P. McKerron, Kelso.

After the business of the club had been transacted, many of the members paid a visit to the Museum of the Tweedside Physical and Antiquarian Society, and were afterwards conducted, by permission of His Grace the Duke of Roxburghe, through the grounds and extensive new gardens and greenhouses at Floors Castle. Unpropitious weather in the early afternoon prevented several of the members from visiting the ruins of Roxburgh Castle, but the venerable abbey came in for a large share of attention and admiration. The lofty central tower had been for some time shewing symptoms of decay, and has recently been strengthened by the introduction through the masonry of strong iron girder rods, which it is to be hoped will for many a day preserve this noble remnant of church architecture as an ornament to Kelso and the

surrounding district. After dinner, the retiring president, Mr. Jerdon, read his address, and Dr. Francis Douglas was elected president for the ensuing year.

The spring meeting was held at Denholm on May 30th, 1867. Present—Dr. Francis Douglas, president; Mr. George Tate, secretary; Sir George Douglas, Bart, Sir Walter Elliot, Messrs. F. Russell, A. Jerdon, A. Jeffrey, W. Elliot, John Hilson, George Hilson, Wm. Bell, John Ord, A. Matthewson, J. Hume, Sholto Douglas, Jas. Smail, Jas. Tait, C. Anderson, Jas. Dickson, Drs. W. Mackenzie, and J. Falla, Revs. D. Macalister, J. S. Green, and as visitors Dr. Hume, of Newcastle, and Dr. Walker, of Glasgow, Dr. Blair and Rev. W. Oliver, of Denholm, and Messrs Currie and Blackburn.

After breakfast, the party examined the very tasteful monument in the centre of the village green—to Leyden the poet, antiquary, and oriental scholar, who perished in 1811 on the fatal shores of Java. The members afterwards separated: one party proceeding to Minto Crag, to examine its basaltic heights, which with the grounds were kindly thrown open to the club by the Earl of Minto; the other party passed up Denholm Dean to Cavers, the ancient seat of James Douglas, Esq., the Lord of the Manor. Here the members were most kindly received by Mr. and Mrs. Douglas, who exhibited to them several relics of the battle of Otterburn, fought in 1388, between the Earl of Douglas and Hotspur. These relics consisted, first, of a much faded and torn pennon of green silk emblazoned with a cross, the lion of Scotland, and the Douglas crest "*Jamais arryere*," and, secondly, a pair of richly ornamented gauntlets, displaying the Percy crest embroidered in pearls, for the possession of which the battle is said to have been fought. Mr. Douglas also kindly showed the original bond or covenant between the Scottish Parliament on the one hand and the nobility, gentry, and clergy of the border counties on the other hand, regarding the Confession of Faith and form of religious worship, a valuable document, lately discovered in the charter chest at Cavers, whose former

proprietors had held the important office of hereditary sheriffs of Teviotdale.

During the walk to and from Cavers several uncommon plants were observed, and one sunny knoll was covered with cowslips, a plant rarely found wild in the western district.

After dinner, three very interesting papers on Denholm, its history, its physical features, its trade, and its remarkable men, were read by Sir Walter Elliot, Mr. Jeffrey, and Mr. Murray; while from Mr. Embleton's hand, through Mr. Tate, were read several notices on subjects of natural history and an obituary notice of our late colleague Mr. Selby, of Twizell, the distinguished ornithologist.

By a special vote Mr. Tate was directed to communicate to Mr. Embleton the thanks of the meeting for his valuable papers, and to express their sympathy with him under his present illness, and their earnest hope that he may be restored to health and be able again to join them in their pleasant field excursions. The following nominations for membership were made:—Dr. Alexander Dewar, Melrose; Mr. William Currie, Lint Hill, Selkirk; Dr. Wm. Blair, Denholm; Mr. John Lee, Procurator Fiscal, Jedburgh.

The second field meeting was held at Dunse on the 27th of June, as it had been ascertained that Ellemford was accessible with difficulty and afforded very inadequate accommodation. A conveyance was provided, however, to take such members to Ellemford as might wish to examine that locality, but none availed themselves of it.

The party consisted of Dr. Francis Douglas, president; Mr. George Tate, secretary; Drs. Charles Douglas, W. W. Campbell, Robert Clay, Messrs. Wm. Elliot, Wm. Stevenson, Charles Watson, Wm. Crawford, Ed. Allen, J. Waite, A. Wilson, Wm. B. Boyd, and as visitors Messrs. Williams and Hogarth.

Through the kindness of Colonel Hay, of Dunse Castle, and Lady Elizabeth Pringle, of Langton, the extensive grounds belonging to these estates were opened to the club. The splendid mansion recently erected at Langton, under the

orders of the late Marquis of Breadalbane, was greatly admired. The old churchyard in its immediate vicinity was next visited and found to contain some curious epitaphs and designs, illustrative of the craft or profession of the deceased whom they were intended to commemorate. It is hoped that these will be thoroughly examined and described, there and elsewhere, before the hand of time entirely obliterates the few which remain legible. After traversing the Langton woods and following the burn, under the guidance of Mr. Stevenson, the party separated at Raecleughhead, where examples exist of aqueous erosion and a great fault in the old red sandstone: one section of members returning thence to Dunse, through the castle woods, examining the kaims and ancient sea margins formerly described in the club's Transactions; whilst another section followed a ravine with banks of hard conglomerate in the direction of Langtonleescleugh in search of *Saxifraga hirculus*, discovered in that locality and added to the Scottish flora by the Rev. Thomas Brown, whose name I am sorry to find has disappeared from our list of members. In this excursion several rare plants were observed—such as *Listera nidus-avis*, *Veronica montana*, *Vicia sylvatica*, *Senecio aquaticus* and *Myosotis sylvatica*. After a careful and almost fruitless search the very rare *Saxifraga* was at length found, in a wet spongy bog, by Dr. Clay, in company with several *Epilobiums*, whose early leaves it was difficult at first to distinguish from that of the *Saxifraga* which had not yet shot up its flowery stem. Many specimens were, however, gathered which flowered afterwards in water. On the return of this party to Dunse and before re-entering the Langton woods *Habenaria albida* and *chlorantha* were found in abundance, *Polypodium dryopteris* and *Aspidium oreopteris* were seen in great beauty, and a large and elegant form of *Rosa spinosissima*, described in the Natural History of the Eastern Borders as the *Rosa ciphiana* of Sir Robert Sibbald, who made it the subject of a Sapphic ode.

The inconvenient arrangement of railway trains early broke up the dinner party. No papers were read; but two gentle-

men were proposed as members of the club—Major the Hon. Robert B. Hamilton, of Langton, and the Rev. David Donaldson, of Alnwick.

The Dunsdale meeting on 30th July was largely attended, notwithstanding the threatening aspect of the weather. There were present—Dr. Francis Douglas, president; Mr. George Tate, secretary; Drs. Charles Douglas, Robson Scott, J. Paxton, Messrs. James Hardy, Wm. Wightman, Charles Rea, T. Y. Greet, Patrick Dickson, Matthew Culley, Septimus Smith, J. C. Langlands, John B. Boyd, W. Henderson, Revs. P. G. McDouall, J. S. Green, Francis Thomson, Adam Davidson, M. H. Graham, P. McKerron, and as visitors Messrs. Charlton, county surveyor, Bigge, of Stamfordham, Carr, of Hedgley, and Cavaye. These gentlemen straggled in from all directions; some examined Henhole, others Dunsdale and the Bizzle, whilst two or three attempted the ascent of the great Cheviot in view of gathering *Cornus Suecica*, whilst Mr. Tate was busy with his hammer, examining the rocks above the Colledge water, where in the early days of the club Mr. James Mitchell, of Wooler, had discovered *Amethysts*. I did not learn that our keen sighted secretary had been equally fortunate in finding any precious stones. With the exception of some mosses, only one other plant, *Salix nigricans*, discovered by Mr. Hardy in the Bizzle, was added to the flora of this well examined district.

After dinner, the secretary read a few notices from Mr. Embleton, which he was requested gratefully to acknowledge. Mr. Tate then read a very interesting paper on the geological formation of the Cheviots, and Mr. James Hardy communicated a list of about seventy mosses new to the district, which he had observed during the previous two or three days spent amongst the Cheviots. The following nominations were made:—Mr. Alex. Roy Borthwick, St. Dunston's Villa, Melrose; Rev. Geo. Albert Ormsby, of Eglington; and Rev. J. P. MacMorland, of Minto.

On Thursday, the 29th of August, the club met at Holy Island. Present—Dr. Francis Douglas, president; Mr. Geo.

Tate, secretary ; Drs. Charles Douglas, R. Clay, Messrs. Geo. Bailes, Charles Rea, Wm. B. Boyd, Middleton Dand, Edmund Friar, Robert Douglas, Ed. Allen, Charles Anderson, Henry R. Hardie, A. H. Borthwick, J. Collingwood Bruce, L.L.D., F. J. W. Collingwood, Watson Askew, Purvis, Robt. Middlemas, Revs. Thomas Leishman, H. M. Carr, J. W. Dunn, Wm. Darnell, and as visitors Messrs. Ralph Tate, F.G.S., of London ; Rev. Dr. Dakins, Messrs. H. Hunter, Geo. Allen, and Wilson.

Some years having elapsed since the club had met in the Island, the numerous objects of interest were new to many members and eagerly revisited by others. The ruins of the priory, the restored church of St. Mary, the remains of ancient Saxon crosses, all demanded their share of attention from the archæological members, whilst those more devoted to natural history strolled along the bay to the castle, thence following the line of railway to the lough and across the Bents to the coves. Here a melancholy sight was presented to view ; the utilitarian aggressor had ruthlessly destroyed the magnificent caverns of mountain limestone which were an object of interest and beauty to all visitors, and afforded shelter to *Phocæ* and innumerable marine plants and *Crustaceæ*. The rocks having been conveyed piecemeal by rail are burnt in kilns constructed close to the castle rock, and thence to a jetty where they are shipped for agricultural and other purposes. Here, however, the geologist lingered to extract from the limestone strata and metamorphosed shales the fossils with which they abounded. Two parties proceeded by the sea shore and through the bents in the direction of the snook, and both were rewarded by discovery of rare plants ; one, *Carex incurva*, new to the district, and it is believed to the flora of England, although abundantly found on our northern Scottish seacoast, and the other *Mertensia maritima*, growing on the northern shore above high tide mark in great beauty and profusion. The latter plant, I understand, had been previously found in the west bay by Mr. Embleton, but had not been chronicled. Other rare plants such as *Alisma*

ranunculoides, *Anagallis tenella*, and *Statice limonium* were again recognized by some of the older botanists.

Dinner was served *al fresco* in the nave of the priory to a larger party than any room in the Island could accommodate, and thereafter some interesting botanical notices were read from Mr. Embleton, followed by a paper by Mr. Tate on the antiquities and geology of Holy Island. Mr. George Bailes laid before the club a section and map of the carboniferous strata of northern Northumberland, and the Rev. T. Leishman read some "Illustrations of Ancient Customs and Superstitions, extracted from the records of the Presbytery of Kelso between 1609 and 1687."

Besides these regular meetings of the club, excursions to the valley of the Ale, a tributary of the Eye, to Newham Loch and to Learmouth Bog were made by myself, Dr. Clay, and Mr. W. B. Boyd. The Ale water appears to have been little known to, or even been visited by, the club, but here we had the guidance of Mr. William Shaw, a hind on the neighbouring farm of Gunsgreen Hill, the discoverer of *Corallorhiza innata*, a self-taught botanist, who devotes his leisure hours to the delightful study of plants, and has acquired no mean experience in discriminating them. Many rare plants occurred during our forenoon ramble. At Learmouth Bog *Carex filiformis* was discovered, new to the district, and on a gravelly eminence to the south of the bog, *Spiræa filipendula* was found abundant. I may likewise mention having found *Goodyera repens* in great profusion in a fir wood on the Smailholm road, four miles from Kelso. The members of the club will learn with regret that draining operations are about to extinguish Learmouth Bog, the stronghold and only habitat in this district of *Aspidium thelypteris*. With this fern too will disappear *Cladium mariscus*, *Pyrola rotundifolia*, *Utricularia minor*, *Salix purpurea*, *Carex filiformis*, *Hippuris vulgaris*, and other plants of interest to the botanist.

Such, gentlemen, is an account of the field operations of the club during the past year, and if discoveries of no very brilliant character have been made, enough has been observed

to prove that the investigation of the natural history of our district is still far from exhausted and affords abundant scope for young and ardent seekers after knowledge. Our ever to be lamented Founder, "the life and soul of the club," in one of his most genial addresses considers it of little moment whether we ever add a single item to the account of science. Such principles, however, were far removed from his practice ; yet should we be unsuccessful in obtaining new objects to reward our search, an abundant field is still in store for the student of nature in remarking the habits and metamorphoses of plants and animals previously known. The beauties of natural scenery too never pall ; whether on the "brown heath or shaggy wood, whether on the mountain or the flood," or on the more peaceful scenes of rural labour, there is a never failing variety of cloud and sunshine, of light and shade, of new and passing objects, which cannot fail to charm the eye and improve the heart.

In the address which I had the honour to deliver to the club twenty-six years ago, I regretted that as a branch of liberal education natural history should not be more taught in our public schools ; happily this opprobrium no longer exists. This important matter has engaged the attention of the British Association for the advancement of science, and has been deemed worthy of the consideration of a Parliamentary Committee, which reports "that the attention of the public appears to have been awakened to the necessity for introducing scientific teaching into our schools, if we are not willing to sink into a condition of inferiority as regards both intellectual culture and skill in art, when compared with Foreign Nations." Already the good fruits of this discussion are beginning to be apparent, both at Harrow and Rugby ; the masters have voluntarily added instruction in natural science to the ordinary classical course, and so far do the boys themselves appreciate this instruction that at Harrow some of them have formed themselves into a voluntary club for the pursuit and cultivation of science. The president of the Section of Economic Science at the late meeting of the British

Association at Dundee, which I attended, considers that we in this country are generally more capable of being cultivated by science than by literature, and gives as his opinion that our schoolmasters, in adhering to the traditions of a pre-scientific period, are throwing away the natural means which Providence has put in their hands of giving an intellectual turn to the sympathies and interests of the great majority of the English people. Two of the most important advantages from the early cultivation of science should not be overlooked; first, the great intellectual pleasure derived in after life, whether abroad or at home, from even a moderate acquaintance with it, and, secondly, on grounds of practical utility, as materially affecting the present position and future progress of civilization and colonization.

Gentlemen, I had intended to make a few further remarks on some of the subjects discussed at the Dundee meeting, more especially one of very great interest to geologists, namely the ages of granites and their character as eruptive or stratified rocks, but I have already detained you too long, and before sitting down, once again thank you for the high honour you conferred on me by electing me to fill this chair. Whatever may be my short comings, I yield to none in my desire to see this club go on and prosper, feeling assured that the more natural science is cultivated the more shall we wonder at the wisdom and goodness of our Creator and the order and regularity of the great laws whereby the world was formed and is upheld.

Notice of Caprimulgus Europæus. By W. WATSON CAMPBELL, M.D.

THE true Goat Sucker (*Caprimulgus Europæus*) is the only example of its family which visits this country, and, though by no means a rare bird, it is comparatively little known and seldom seen. One reason for this may be that it is a night bird, and another that its flight is almost noiseless—almost, for the name, *fluffer*, by which it is known in some places, would seem to have been given on account of the feeble but peculiar sound caused while in flight. Another name given to it is the Jar, or Night Jar, from the note it utters.

It is classed thus—

ORDER—*Passerinæ*.

SUB-ORDER—*Fissirostres*.

FAMILY—*Caprimulgidæ*.

SUB-FAMILY—*Caprimulginæ*.

Description.—It is rather larger than the thrush; the plumage is brown and exceedingly soft; the wings, which are wide at their bases, have a good span and are strong and light; the head seems flat and depressed from above, and the thighs and legs are weak. Like as in other Fissirostres the gape is much cleft, but the cleaving is greater in the true Goat Sucker than in the others—the angles of the gape extending backwards under, and a little behind the eyes. The capacity of the maw is increased by a set of stiff bristles which project forwards and outwards from the upper mandible. The bill is weak, curved, and short. A peculiar comb-like, or deeply serrated claw terminates the middle toe.

Habits.—They lay and hatch on the ground under the shelter of braken or furze. They squat rather than perch, and their favourite localities are the ground where they are not likely to be disturbed, or the decayed branch of a tree along which they lie, and, in this position, even at a short distance, look like a bit loose bark. They are insectivorous and seek their food at dusk and during dark.

Though ornithologists do not agree about the maw being expanded during flight, or about the use of the middle claw, yet the bristles of the former are evidently intended to increase its capacity, and thereby enable the bird the better to secure its insect prey. The opinion held by one or two ornithologists about the use of the claw—that it is for seizing the insects—is rather improbable; the most natural and likely

use to which this comb appendage can be put is to dress the beard and keep it free from gossamer and dust.

The specimen exhibited at the June meeting was shot in the neighbourhood of Longformacus near Dunse.

Denholm and its Vicinity. By SIR WALTER ELLIOT, K.C.S.I., of Wolfelee.

THE name of Denholm is of Saxon origin and is evidently derived from its position in the *holm* or haugh of the Teviot, near the den or *dene* which has this day afforded one of the most agreeable objects of interest presented by this neighbourhood, to the botanists and lovers of the picturesque of our party. Reliques belonging both to the Celtic and Roman periods have been found in the vicinity of the present village, (and Minto and Cavers are both believed to have a Celtic etymology), but of the modern name no ascertained record exists of an older date than the thirteenth century, when we find Gwy of Denum among those who swore fealty to Edward I. and signed the Ragman Rolls in 1296, together with other names of note in the neighbourhood.*

At this time the Baliol family was paramount in this locality, and Gwy of Denum was probably a follower of Alexander Baliol of Cavers, who also signed the roll, and died in 1307, leaving two sons Alexander and Thomas. Gwy's successors in the barony of Denum were John and William, both of whom were recognised successively by Edward III. as barons of Denum.† But during this period of unrelenting struggle between the Bruce and his English opponents there was little certainty or permanence of tenure. As soon as the Scottish king was established on the throne he conferred the barony of Cavers together with Denholm on Thomas the thirteenth earl of Mar. The earl of Mar appears to have been related to the Baliol family and also to William earl of Douglas, both of whom are called his brothers-in-law, but in what manner cannot now be ascertained. Be that as it may, Mar conferred these newly acquired possessions, in fee, upon Thomas de Baliol, and on his death and that of Mar, both without issue, the lands of Cavers and Denum passed to Douglas.‡

* As Thomas de Roule, William de Fairningstone, Johan de Harden, Richard de Chesehelm, Aymer de Rotherforde, Johan de Lillesclif, Robert del Counte de Rokesburgh, and others, p. 127-8.

† Rolls of Edward III., 1353 to 1357, Orig. Par. 1. 335.

‡ According to Surtees, Thomas Baliol, lord of Cavers, sold that estate to William earl of Douglas, in 1368. R. White, Bat. of Otterburn, 93. Mag. Sigill. v. 83., p. 143. Doug. Peer, I., 366.

By him a charter was granted to Thomas third baron Cranyston, of the lands of Denum, Stobs, &c., to be held in fee, about the year 1382, which was confirmed by Robert II. in September 1441, whose charter specifies "the lands of Foulerysland in Denum and the little Rulwood beside the town of Denum in the barony of Cavers." This "little Rulwood" has been supposed to be the old name of the dean; but as the glen is connected with the Teviot and not with the Rule, which joins the Teviot near Spittal, below the village, I am inclined to think it refers to a locality lower down the valley.*

Denholm remained in possession of the Cranstoun family till 1658, and shared in the troubles and disasters which desolated the Borders before the union of the two crowns. In 1524 Lord Dacre boasted that he had harried the whole Border not leaving a habitable place. In a letter to Wolsey, dated 11 June, he says, "nothing was left on the frontiers of Scotland, without it be part of old houses whereof the thatch and coverings be taken away; by reason whereof they cannot be burnt." (Ellis, or. letters). In 1533-5 Denholm and Cavers are specially mentioned as having been burnt by Lord Dacre and Sir Kerstial Dacre. (Wilson, mem. of Hawick, p. 6.) In 1544 the whole of the Merse and Teviotdale was "miserably plundered and destroyed" by Sir Ralph Ever, (Redpath, 550), and in the following year Seymour earl of Hertford devastated the same tract still more effectively. According to an interesting cotemporary record, he marched from "Kelso to Rokesborowe menes" on Monday and thence "to Bongedworthe a Tyweseday, and burnying and theistroyng all that day, both coryn and howses and hey and turff and a Wenesday burend Jedwourd Abbey and the fryers menors, and all the townes ii myle beyond, as Cavaires and Denem and Mento and Manton crake (Minto Craig) and Bedrowle and Towres and Newton and Langeton (Lanton) and Hassenden and the Barne-hills (Turnbulls of Barnhill) and the Bennetts (Bennetts of Chesters) and Ancram and many mor and returnyd to campe that Wenesday to Earlford." (Cotemporary account of the earl of Hertford's second expedition to Scotland in September 1545; by Barth. W. Butler, York Herald, in attendance on

* In the Retours, under date 4th October, 1687, these lands are clearly distinguished on the succession of William Douglas of Cavers to his father, as (inter alia) * * the lands of Spittal-toune and chapel of Carlaverok, * * the town and lands of Denholme; the lands of Denholme's dean and Bailie haigestoks, 10 libratæ of the Dominical lands of Denholm * * the lands of little Rowlwood with the grove and tower and the lands called Comre near the town of Denholm; the lands called Foulerslands in Denholm, &c., &c. (291).

Lord Hertford. Proc. Soc. Antiq., Sc. 1274).^{*} Although not specially named, Denholm could hardly have escaped the ravages of the expedition under the earl of Sussex in 1570, when Jedburgh, Hawick, and Kelso were plundered and burnt and the whole country laid waste. (Redpath, 634).

In 1658 Sir Archibald Douglas, of Cavers, purchased the lands of Spittal and Denholm from William, Lord Cranstoun, and reunited them to the estate of Cavers. From this time the circumstances of the village rapidly improved. The new proprietor built or restored for his own residence the mansion called the Ha', Westgate Ha', or Old Castle Ha', which still exhibits on the lintel of the entrance the date 1662, and over the chimney of the great hall, now the kitchen, two shields, one of his own (the Douglas arms,) the other of his wife Dame Rachel Skene,† the daughter of Sir James Skene of Halyards, president of the Court of Session. He feued the land on which the village now stands for the erection of houses and for gardens to such persons as were able to take them, and by degrees the whole site was thus appropriated. Few of the original titles now remain. The earliest extant, date from the beginning of the eighteenth century. The conditions of the feus were, the payment of one merk scots for every *particate*‡ of land, with the privilege of a *darg* or day's casting of peat, afterwards commuted to an assignment of a bit of the common, where the owner might cast his peats at pleasure, and a load of *divots* or sods from the common loaning for the roofing or repair of the dwelling. These arrangements continued in force till 1835, when by a deed of *excamb* between the late laird of Cavers and the feuars, the latter renounced their peat rights on Ruberslaw for an extension of their garden lands, which nearly doubled the original plots and gave rise to the distinction between "the auld and new yairds." The villagers were further entitled to graze their cows on the scanty pasture of the common land and on the river haughs, and they cultivated strips of the loaning on the east of the village with various crops, in the same manner as the riband husbandry still subsisting in the Highlands. They also raised

* A detailed list of the places destroyed in this raid is preserved among the Burleigh Papers, in which are specified "on the River Teviot (among others) East Barnehill, Mynto Crag, Mynto towne and place, West Mynto, the Cragge-end * * Hassington (Hassendean) * * Esshe banke, Cavers, Bryer yards, Denhome, &c.;" and "on the water of Rowle; Rowle, Spittal, Bedrowle, Rowlewood, the Wolles, (Wells), &c." Ibid 277.

† These were covered with paper when visited by the club, but the landlady obligingly tore it off the lady's shield, which exhibited 3 wolves heads, 2 and 1, with a sword fesswise between them, and the letters D. R. S. above and on either side.

‡ About a rood.

poultry and were noted for their breed of geese, which gave rise to the saying "Denholm for lean geese" and "dirty Denholm;" a soubriquet not ill applied, for my early recollection, fifty years ago, of the trim green before us now so neatly enclosed, was that of an open space encumbered with middens, pig-styes, heaps of firewood, goose-dubs, and holes full of black glaur, and every kind of nuisance. Most of the houses had outside stairs, ash-pits in the street, and unsightly lay-tos for cows and poultry. By a subsequent agreement with the late Mr. Douglas, in 1836, it was stipulated that the green should be inclosed and reserved for grazing purposes only, that no feus for building should be granted within its precincts, and that the profits of the pasture should be expended on local improvements. It was further provided that the streets should be cleared of all encroachments and a clear road-way maintained.

The occupations of the inhabitants have been confined to the simplest forms of manufacture. Like most other places the village had its *wabsters*, who span and wove linen fabrics from flax grown in the neighbourhood; but this employment was suspended about the beginning of the century by the stocking trade, which grew and flourished to some extent, one of the most successful traders being Mr. Andrew Scott, whose supplies were never able to meet the demand of the Glasgow market, to which he resorted. The present flourishing firm of Dickson and Laing, in Hawick, first started in Denholm, in 1793, under the designation of Dickson and Beattie, and the dwelling pointed out to us as John Leyden's birthplace was their scouring-house. But they were shortly attracted by the superior advantages of Hawick and transferred their plant to Wilton Mills in 1803.

The only other branch of industry still in existence is the working of the sandstone quarries on Denholm Hill, originally opened by Mr. Fergusson, and now wrought by Mr. Laing, who supplies the whole district with building material of the best description.

To facilitate the trading transactions of the community two annual fairs were held, which have gradually dwindled away since the commencement of the present century. The first or summer fair was held in May or June, the second or mart fair in November, the day before that of Jedburgh. They were opened by the superior (corresponding with the lord of the manor,) riding up to the cross, attended by his followers, and making the usual proclamation. He was entitled to

certain dues which he collected on the transactions of the market. At the mart fair the people laid in their stock of salted provision for the winter, and both were used for hiring purposes and for the settlement of local dealings of all kinds. The name of an old trader who used to pitch his booth on the green at such seasons still survives in juvenile tradition as "Tammy Tudhope the toy-man!" The close of the fair was celebrated by a bonfire called the *Boughabale* or "pile of boughs," a custom derived from the sun-worship prevalent among our Saxon ancestors, of which many traces still remain in practices hardly yet obsolete on St. John's Eve and on special occasions.* The practice long survived the fairs and only ceased altogether when the green was enclosed.

The cross stood near the site of Leyden's monument and was still perfect in my younger days, but some twenty years ago, the feuars requiring a water-trough for their cows, ruthlessly converted it to that purpose. It was a low stone of circular form, like that still extant at Cavers, surmounted by a small cross.

Two neighbouring families of note are intimately connected with Denholm—those of Cavers and Minto.

The Douglasses of Cavers are descended from James second earl of Douglas, who was killed at the Battle of Otterburn. He left no legitimate male issue by his marriage in 1371 with Margaret daughter of Robert II., but he had two natural sons, William, the founder of the illustrious house of Queensberry; and Archibald, progenitor of the family of Cavers.† Archibald is said to have carried his father's pennon at the battle of Otterburn, but his name is nowhere specially mentioned as having been present on that day. The trophies, however, still preserved at Cavers (and this day exhibited to us by his lineal descendant,) leave no room to doubt that he must have taken part in the fight.‡ These consist first of a

* See some curious illustrations of this superstition in Notes and Queries, 3rd series, vol. ix., pp. 175, 263, 285, 354, 478, 516.

† According to most authorities, James, successor in the earldom, was also illegitimate. Archibald the Grim, 3rd earl, is said to have been a natural son of the good Sir James. (Doug. Peer. by Wood, vol. I., p. 426, also II., p. 745. White's Otterburn, p. 93). But Godscroft maintains that this Archibald the Grim, lord of Galloway, was the lawful brother of earl James. (Hist. of the Ho. of Douglas, pp. 73, 79, and 111).

‡ Froissart's narrative, which is by far the most animated and circumstantial states that when earl Douglas was found by his friends mortally wounded on the field, his squires, Hart and Glendinning, were lying dead and his chaplain, Lundie, sore hurt, beside him. His banner also was stricken down, and David Campbell, the squire who bore it, slain. Froissart, Book III., ch. 128. Godscroft, p. 100. Archibald of Cavers probably fought as a knight, for his own pennon was borne on the field by one of his retainers named Staward, whose family, now Staverts, long continued on the property. White's Otterb., 131.

pennon or banderol, thirteen feet long, on which is wrought a lion passant, with a St. Andrew's or saltier cross and two hearts in front, and a mullet or star with the words *Jamais arriere* behind; and secondly, a pair of gloves richly embroidered with small pearls and silver, and also bearing a device of a lion. They were taken by Earl Douglas from Hotspur two or three days before the battle, in an encounter at the barriers before the citadel of Newcastle, to which the Scottish army had laid siege. These gloves were probably some *gage d'amour* or lady's favor, placed by Percy on his helmet in accordance with the usages of chivalry.* Hence Hotspur's anxiety to recover them, which led to this celebrated passage of arms, "of all the battles, great and small, described in this history," says Froissart, "the best contested and the most severe." Not the least remarkable circumstance connected with it is, that it was fought for the most part by moonlight, in the night between the 19th and 20th August, 1388.

With the barony of Cavers Sir Archibald also acquired the hereditary sheriffship of Teviotdale, which was confirmed to him by royal charter in 1412. These honors were enjoyed by his successors for several generations, some of them likewise holding the office of warden of the Marches. The family has always been noted for its attachment to the cause of constitutional freedom. Sir William the 9th and Sir Archibald the 10th laird, the same who re-acquired Denholm from the Cranstouns, held commissions in the parliamentary army during the civil war. They both signed the confession of faith and bond of union, commonly called the solemn league and covenant, in 1581, which is still preserved at Cavers, and exerted themselves in opposing Montrose, intercepting the English levies on their way to join his army in 1646, and taking part in the action at Alderney, near Nairn, where nine of Sir William's near relatives are said to have fallen.†

The restoration brought a return of religious persecution. Sir Archibald refusing to abjure his signature of the covenant was fined in the sum of £3,600. He did not long survive his father (who died in 1658), and was succeeded by his son Sir William, who, in 1659, had married Katherine daughter of Thomas Rigg of Athernie in Fife, a niece of his mother

* All the histories declare the trophy snatched by Douglas from his opponent to have been a pennon. But the gloves themselves prove this to be an error. The pennon preserved at Cavers is a Douglas banner, as shown by the motto and cognizance. Seton's Heraldry, p. 153, 244.

† Cotemporary record, in a family bible of the Gledstanes, preserved in Hawick Museum. Also, Wilson's Memories of Hawick, pp. 182 and 192.

Dame Rachel Skene.* He took the part of the ministers ejected from their livings in 1662, and declined to countenance the curate sent to replace Mr. Gillon the deprived incumbent of Cavers parish. The presbytery of Jedburgh having in vain tried to gain admittance to the church, were obliged to institute Mr. Somerville, grandfather of the late minister of Jedburgh, the newly appointed clergyman, at the kirk-style. They complained to the Archbishop of Glasgow that not only had Sir William and Lady Douglas refused to see them or to deliver up the keys of the church, but that a number of women had assembled in the kirkyard with their laps full of stones, threatening violence and abusing them as soul-murderers and servants of the devil! He also refused to sign the declaration abjuring the covenant, for which he was deprived of his office of Sheriff. In 1676 he was cited to appear before the Privy Council for contravening the proclamation of the 1st March of that year, which forbids, under heavy penalties, the entertainment by private individuals of any chaplain or schoolmaster, not licensed by the bishop of the diocese. Sir William had engaged a Mr. Osborne, a young clergyman, not so qualified, as tutor to his children, and failing to appear in compliance with the citation he was outlawed, and died shortly afterwards. His widow, Dame Katherine Rigg, followed even more resolutely in her husband's footsteps. She steadfastly refused to give up her children to be educated in the episcopalian form of worship; but her eldest son, William, was forcibly taken from her and placed under tutors appointed by the Privy Council.† She also befriended and sheltered the ejected ministers, and attended the conventicles at which they preached, which met in the most secluded places in order to elude the vigilance of the soldiers, who were spread over the country to put them down. Many of the spots which were used for these wild preachings are still pointed out in the neighbourhood, and numerous anecdotes are current in the district of the adventures and hair-breadth escapes of the devoted men who daily perilled their lives for the spiritual good of their scattered flocks.‡

* Crawford's Genealogical Collections in the Ladies of the Covenant, p. 309.

† These were men of unexceptionable character, save that they had conformed to the innovations introduced by the government. Among them were Sir William Elliot of Stobbs, Mr. Thomas Douglas, brother of Sir William, and two others of the same name and probably relatives also.

‡ Peden's pulpit on the summit and Hagburn on the western slope of Ruberslaw; Peden's vale in the Dean, a little below the cottage; and the Little Dean where the Stoney burn flows into the main stream, are some of the best known of these conventicle places of meeting.

The determined bearing of "the gude leddie of Cavers," the name by which she is affectionately remembered, speedily subjected her to persecution. Charges were framed against her by Sir John Nisbet, the king's advocate, in 1680, and again by his successor Sir George Mackenzie in 1682. On the latter occasion she was summoned before the Privy Council on the 13th November, and on the 16th having refused, in the absence of other proof, to clear herself by oath, she was pronounced guilty, sentenced to pay a fine of 9000 merks Scots (about £500, which was more than three times the amount of her jointure), and to find security for her future good behaviour. Unable to comply with these exorbitant conditions she was committed to the tolbooth of Edinburgh, and thence transferred to Stirling castle where she remained in prison for two years. Meantime the infamous Urquhart of Meldrum, one of the commissioners appointed by the council for carrying out their iniquitous decrees against the covenanters, not only arrested the whole rents of the Caver's estate in satisfaction of the fine, but even required the tenants to pay again those of 1683, which had already been discharged and acquittances granted. These unjust and oppressive proceedings were checked by the return of her son Sir William from the continent. He proved of a more compliant disposition than his parents, and signed the test required by the council, on which he was restored to his hereditary office of sheriff. He also procured his mother's liberation on condition of paying the fine and engaging that she should quit the kingdom. She retired into England, but seems to have returned to Cavers after the expulsion of the Stuarts, and to have died there. The exact date is not known; but an account of her funeral expenses is still extant in the charter room at Cavers.

The rigour of persecution gradually subdued the zeal of the covenanters, till few except the sterner Cameronians persevered in open resistance to the policy of the government. These, after the proclamation, formed themselves into a congregation at Denholm, where Sir William assigned them a site for a chapel. One of their ministers, Mr. John Arnot, died in 1774, and is buried at Cavers old churchyard. He was succeeded by Mr. James Duncan, who kept the congregation together till his death in 1830, after which the Cameronians ceased to worship as a distinct body. About this time a community of Independents was formed by a somewhat remarkable character named Francis Dick, originally a fisherman of Broughty-ferry. He was led to address a religious

meeting on an unexpected emergency, when he acquitted himself with such fervour and success that he was invited to enter the ministry. He joined the Independents and for some years itinerated as a missionary. Invited to Denholm by the late Mr. Douglas, he laboured there for several years, residing in the Dean cottage, and preaching in the Cameronian chapel, and occasionally also in Hawick and the neighbourhood. From these small beginnings a respectable congregation was gradually collected, with a stated minister and place of worship.

Mr. James Douglas, the late proprietor of Cavers, was himself a remarkable man—an acute thinker, a profound scholar, and deeply read in every branch of literature. He is the author of several religious and critical works, written in a catholic spirit, and abounding in logical argument and accurate research. He was also distinguished for his unostentatious liberality and extensive benevolence,—qualities inherited by the present laird, his only surviving son.

The Elliots of Minto have for the last five generations occupied a conspicuous place in public life, on the liberal side of politics. Gilbert, the first of the family, born in 1651, was a younger son of Robert Elliot of Midlem miln, a cadet of Stobbs. Educated as a writer in Edinburgh, he early joined the Hanoverian party, and distinguished himself by his defence of his friend, the Rev. William Veitch, in 1679, and by his exertions in favour of the earl of Argyle in 1681, both of whom had been condemned by the Scottish Justiciary Court. On the first occasion he procured an arrest of all further proceedings against Veitch through the interest of Shaftesbury; on the second, though his journey to London proved unsuccessful, he by hard riding, outstripped the king's messenger carrying down the confirmation of the capital sentence, and by giving timely warning enabled Argyle to effect his escape from Edinburgh Castle. After this he engaged actively in the schemes of that unfortunate nobleman against the government, and took part in the expedition from Holland to the west of Scotland in 1685, which ended so disastrously for Argyle. On the dispersion of their little force Elliot escaped to the continent. For this he was, in his absence, found guilty of treason, and sentence of death and forfeiture was pronounced against him and other leaders. Two years later, King James desiring to conciliate the Presbyterian party, caused this award to be reversed, and thus Elliot was enabled to return to Scotland in 1687 and resume

the exercise of his profession. In the same year he was called to the bar and admitted to practice as an advocate, which he did with great success. After the Revolution he was appointed clerk of the Privy Council in Scotland, was knighted in 1692, and created a baronet in 1700. He represented Roxburghshire in the parliament of 1703, in which year also he purchased the estate of Minto, from which he took his title when raised to the bench in 1705. He died in 1718, and was succeeded by his son, the second Sir Gilbert, who likewise followed the profession of the law, in which he rose to eminence and became a lord of Session, and afterwards Lord Justice Clerk, assuming the same title that his father had taken. He had several children, most of whom became distinguished characters. His eldest son, the third Sir Gilbert, represented first Selkirkshire and afterwards Roxburghshire in parliament, and held office from 1756, when he became a lord of the Admiralty, after which he filled the appointments of treasurer of the Chamber, keeper of the signet for Scotland, and treasurer of the navy. He was also imbued with literary tastes, and has left a monument of his poetical talent in the elegant pastoral beginning—

“My sheep I neglected, I broke my sheep crook.”

His sister Jean composed the beautiful version of the Flowers of the Forest, printed by Sir Walter Scott in the *Minstrelsy of the Scottish Border*:*—

“I’ve heard them liltin’ at the ewe-milking.”

Another brother, John, was a distinguished naval officer, and fought the brilliant action off the Isle of Man, which terminated the daring career of Thurot on the 20th January, 1760. Sir Gilbert died in 1777, and his son, the fourth Sir Gilbert, after filling several diplomatic situations abroad, was raised to the peerage, and appointed Governor-general of India. His brother Hugh likewise occupied several important diplomatic posts, and held one of the minor Indian governments—that of Madras. The second earl maintained the character of his family, and held the offices of ambassador at the court of Berlin, and in the cabinet, of first lord of the Admiralty and lord privy seal. He also cultivated the muses with no small success, although none of his effusions have been allowed to appear in print.

But the most remarkable name connected with Denholm is that of John Leyden, whose humble dwelling, in which he first saw the light, we have just visited. Born in 1775 of

* Vol. II., p. 156.

poor parents, having no advantages of position or wealth to foster the culture of talents of a high order, he contrived, by the native energy of his character, aided by a wonderful memory and extraordinary versatility, to amass an amount of knowledge and information on every subject, which brought him to the notice, and admitted him to the intimacy, of that assemblage of distinguished men, for which the northern capital was then remarkable. Walter Scott, Dr. Robert Anderson, and Richard Heber first took him by the hand, and through them he became acquainted with the first men of the day. His extraordinary powers of application enabled him to give his attention to every branch of study—classics, mathematics, antiquities, poetry, medicine, botany, chemistry, &c., but his favourite pursuit was philology, and some of his earliest efforts were metrical translations from European and oriental languages. When some of his friends remonstrated with him on such a course of indefinite and miscellaneous study, his characteristic reply was, “Dash it man, what does it matter? if ye hae the scaffolding ready ye can sune run up the building!” And he shortly afterwards proved the justice of his plan, at least in his own case; for when, through the interest of his literary friends, he obtained a promise of an appointment to India, to enable him to prosecute the comparative study of languages, the only nomination of the season remaining unappropriated was a Madras assistant surgeonship. Nowise discouraged, he at once prepared himself to accept it. Although he had been educated for the church and was already a licensed preacher, so great was his desire for travel, such his thirst for distinction in his favourite pursuits, that by dint of application aided by an elementary knowledge of medicine acquired in the course of his discursive reading, he was enabled to pass his surgeon’s examination with credit in six months, immediately after which he took the degree of M.D. at Aberdeen. He sailed for India in 1803, and was at once appointed by Lord Wm. Bentinck to the medical charge of the trigonometrical survey, under Lambton, in Mysore, that he might devote himself expressly to the native languages, and to the natural history of the country. He set to work with his usual energy, but his health soon failed. Attacked with disease of the liver in 1805, he was obliged to resort for change to the western coast, and thence proceeded in a native vessel to Penang. There he remained for several months, during which he mastered the structure and affinities of the Indo-Chinese languages, the results of which he communi-

cated to the Asiatic society on his arrival in Calcutta in 1806. There he was appointed professor of Hindi in the college of Fort William, but resigned it for a more lucrative post bestowed on him by Lord Minto, the better to prosecute his studies. Thus he continued for four years, when on the despatch of the expedition to Java in 1811, he accompanied his patron the Governor-general as chief of the interpreters' department. On the capture of Batavia he landed in search of books, mss., &c., and venturing incautiously into the underground library of a Dutch merchant, which in that pestilential climate was filled with noxious air, he caught a malignant fever which carried him off in three days, on the 28th August, 1811, in the 36th year of his age.

Cut off in the prime of life and in the full career of his investigations, we can only judge by what he had already accomplished, of the loss sustained by oriental literature through his premature death. "The tree was struck when covered with blossoms, ere fruit could be gathered, and its desolate branches and riven trunk told to the world the saddest of tales,—of hope frustrated, of manhood blighted, of labour lost to the world."*

In the six years passed in Scotland, after leaving college, he acquired a tolerably competent knowledge of the leading European and Semitic tongues. His preliminary dissertation to the curious old poem "The complaynt of Scotland," written for Constable's edition, exhibits a store of antiquarian reading and an acquaintance with early northern literature, especially that of Scotland, that drew forth the not always readily accorded praise of Ritson. In the introduction to the ballad of Tamlane,† drawn up for his friend Scott, he develops the history of fairy mythology. A historical and philosophical sketch of the progress of African discovery published in 1799, was the result of a design he at one time entertained of taking up the career of his countryman Mungo Park. For a short time also he edited the Scots Magazine, contributing several metrical translations from Norse, Icelandic, Hebrew, Arabic, Persian, and other fugitive pieces, "indicating," says one of his biographers, "more genius than taste." His longest poem is "The Scenes of Infancy," which exhibits a deep sense of the beauties of nature and an enthusiastic love of home, without attaining to a high degree of poetic excellence.

* Calcutta Review, xxxi, 5.

† Border Minstrelsy, vol. II., 167

The fruits of his eight years of Indian life are even more scanty. During his lifetime he published the essay on the Indo-Chinese languages already mentioned, which appeared in the tenth volume of the Asiatic Researches. He also, whilst sub-secretary to the Asiatic Society, contributed another paper on the Roshaniah, a sect of heretical Affghans, which appeared in the eleventh volume of their researches.

To the Bible society he supplied translations of the following portions of the New Testament:—

The gospels of Matthew and Mark in Pushtu.

The four gospels in Maldivian.

The gospel of Mark in Beluchi.

Do. in Macassar.

Do. in Bugi.

He also submitted proposals to the translation committee of the same society for rendering the gospels into Saimese, Rakheng, and Jagatai. It is not easy to ascertain what progress he had made in the other oriental tongues, but he appears to have been more or less conversant with the following:—

<i>Aryan.</i>	<i>Polysyllabic Indo-Chinese.</i>
Sanscrit.	Malay.
Páli.	Bugi.
Bengali.	Macassar.
Mahratta.	Jawa.
Hindustani.	Bima.
<i>Dravidian.</i>	Batta.
Tamil.	Tagala.
Telugu.	Maldivian.
Canarese.	<i>Monosyllabic Indo-Chinese.</i>
Malayalim.	Rhakheng.
<i>Turanian.</i>	Mon.
Pushtu.	Barma.
Beluchi.	Thay.
Turki.	Khomen.
Jagatai.	Lau.
	Anam.

In addition to which must be added those previously mentioned—Arabic, Persian, Hebrew, from which he had published translations, Syriac, and Armenian.

In many of those he left work in various stages of progress, but scarcely anything sufficiently matured for publication. What he contemplated was a systematic comparative arrangement of languages, the germ of which may be observed in

the published essay on the Indo-Chinese tongues, a task which, had he been spared, he would doubtless have completed.

His literary remains were bequeathed to his early friends, the late Richard Heber and William Erskine, the latter a school-fellow with whom he renewed his intimacy at Bombay. Under these auspices, some of his papers, with a sketch of his life by the Rev. James Morton, appeared in 1819. His Malay annals with a slight introduction by Sir Stamford Raffles was published in 1821, and the commentaries of Sultan Baber translated from the Turki, edited and completed by Mr. Erskine, were not allowed to see the light till 1826.

These posthumous works appearing at long intervals, show what an amount of materials he had collected and what the desire to know what remains. "Besides translations from Persian, Arabic, and Sanscrit," says Mr. Morton, "there are among his Mss. many valuable philological tracts, and several grammars completed; particularly one of the Malay language and of the Pracrit. To the latter work he had been prompted by his friend Mr Henry Colebrooke, who has since expressed his satisfaction with Leyden's execution of this arduous and useful labour."* "The number and variety of the literary undertakings of that extraordinary man," writes Erskine, "many of them conducted far towards a conclusion, would have excited surprise had they been executed by a recluse scholar who had no other public duty to perform," &c.† We know that he had devoted much time before sailing to Batavia, to a dissertation on the Indo-Persian, Indo-Chinese, and Dekhani languages, of which no trace has been found, a loss deeply to be deplored.‡ In a letter to John Ballantyne, written from Penang in 1805, he refers to translations of some ancient inscribed copper-plates in possession of a colony of Jews who had been settled at Cochin for 2000 years. These had long excited the curiosity of scholars, being in a language and character now almost obsolete. Translations of these were printed in a Madras local journal by two eminent scholars, the late F. W. Ellis and the Rev. Dr. Gundert, both made many years subsequent to Leyden's death.§ He further states that he had deciphered the inscriptions at Mavalipuram on the Seven Pagodas near Madras, more recently read by Dr. B. Babington, and published in the Transactions of the Royal

* Poetical Remains, by Morton, 1819, p. lxii.

† Introd. Comm. of Baber.

‡ Calc. Rev. XXXI., 31.

§ Madras Jour. of Lit. and Sc., vol. XIII., p. 115, also vols. XX and XXI.

Asiatic Society.* In addition to these, he adds, that he had made out several Hala Lippi inscriptions in the most ancient Tamil, all of which if recoverable would prove valuable contributions to our knowledge of Indian antiquities even now.

The elegant cenotaph which adorns the green before us was erected by a few of his admiring fellow-countrymen in 1861. At its inauguration on the 19th October of that year, Lord Minto read the following extracts of a letter from his grandfather, the Governor-general of India, written only a few weeks before Leyden's death. They were published in a local journal with an account of the ceremony, but are deserving of a more permanent record.

"H.M.S. *Modeste*, at sea, May, 1811.

Dr. Leyden's learning is stupendous, and he is also a very universal scholar. His knowledge, extensive and minute as it is, is always in his pockets, at his finger ends, and on the tip of his tongue. He has made it completely his own, and it is all ready money. All his talent and labour indeed, which are both excessive, could not, however, have accumulated such stores without his extraordinary memory. I begin, I fear, to look at that faculty with increasing wonder, I hope without envy, but something like one's admiration of young eyes. It must be confessed that Leyden has occasion for all the stores which application and memory can furnish to supply his tongue, which would dissipate a common stock in a week. I do not believe so great a reader was ever so great a talker before,"—...

"The following passage," said Lord Minto, "occurs after some remarks by my grandfather on the excellent conversational powers of some members of his family, addressed to one of them in particular":—"You would appear absolutely silent in his company, as a ship under weigh seems at anchor when it is passed by a swifter sailer. Another feature of his conversation is a shrill, piercing, and at the same time grating voice. A frigate is not near large enough to place the ear at the proper point of hearing. His audience is always suffering the same sort of strain which the eye experiences too near an object which it is to examine attentively. One peculiarity more, which is the more remarkable in so great a learner of languages, he has never learned to speak English either in pronunciation or idiom. In all these respects he is as faithful to the 'Scenes of Infancy' as if he had never greeted Te'ot water, or seen anything more like a ship than a pair

* Vol. II., 258.

of trows in Cocker's haugh pool. I ought to correct this, however, by saying that it applies more to pronunciation than idiom, for he uses of course the words of learned conversation, with a good mixture indeed of native phraseology and forms of speech. It may, perhaps, be rather in written than spoken language that he is so astonishingly learned, and it may be the gift of pens rather than tongues that has fallen upon him. If he had been at Babel he would infallibly have learned all the languages there, but in the end they must all have merged in the 'Tivitdale.' . . . I must say, to his honour, that he has as intimate and profound a knowledge of the geography, history, mutual relation, characters and manners of every tribe in Asia, as he has of their language. On the present occasion there is not an island or petty state in the multitude of islands and nations among which we are going of which he has not a tolerably minute and accurate knowledge. His conversation is rather excursive, because on his way to the point of enquiry he strikes aside to some collateral topics, and from thence diverges still wider from the original object. His pen is sober, steady, concise, lucid, and well fed with useful as well as curious matter. His reasoning is just, his judgement extremely sound, and his principles always admirable. His mind is upright and independent, his character spirited and generous, with a strong leaning to the chivalrous, and in my own experience I have never found any traces either of wrong head, or of an impracticable and unpleasant temper. . . . I have indulged myself in this portrait, because I feel an interest in which you all share in so distinguished a worthy of Teviotdale."

The only other name calling for special mention in connection with Denholm is that of the late James Duncan, who died here in December, 1861. He was the eldest son of the Rev. James Duncan, already noticed as having been in charge of the Cameronian congregation, a duty which he performed for upwards of 50 years, until his death in 1830 at the ripe age of 75. He was a man of some classical attainments and seems to have had the talent of imbuing others with a love of literature; for he was the earliest preceptor of Leyden, and his tastes had probably no small influence in forming the mind of his son.

Young James, who was born in 1804, completed his education in Edinburgh with reference to his destined profession of the ministry. But being naturally of a shy, nervous

temperament, he shrank from the public exercise of his calling, and it was not till several years after the completion of his clerical studies that he reluctantly, at the solicitation of his friends, applied to be licensed as a preacher in the national church, when he was appointed to the newly established parish of Teviothead, formed out of the parishes of Cavers and Hawick. This step, which he took contrary to his own better judgment, embittered the remainder of his days. The public exercise of his sacred functions involved a constant struggle with his retiring disposition, which not only marred his success as a preacher, but led to the adoption of habits which obliged him eventually to retire into private life.

Like many other men of genius he mistook his calling. Had he allowed free course to the original bent of his mind, he would probably have earned a higher reputation and certainly achieved a greater amount of happiness. The interval between the termination of his college career and his appointment to Teviothead was chiefly given to private tuition and to the pursuit of natural history. He early took to the study of botany, and was a favourite pupil of Dr. Graham, whom he accompanied in many of his excursions. He next turned his attention to entomology, and prepared a catalogue of the Coleoptera near Edinburgh for the Wernerian Society, which formed the basis of the "*Entomologia Edinensis; Coleoptera*,"* still the standard local work on the subject, which he brought out in conjunction with the late amiable and talented James Wilson, who contributed the introduction and notices of habits, but the nomenclature, arrangement and description of species were almost wholly the work of Duncan. After this he furnished Sir William Jardine with the seven volumes of entomology included in the series of the Naturalists' Library, and treating of the Orthoptera, Coleoptera, British Butterflies and British Moths, Foreign Butterflies, Bees and Exotic Moths, with an introductory treatise and biographies of the most eminent entomologists.†

On his retirement from clerical duty, he returned with renewed zest to his favourite pursuits and was employed on various tasks by some of the first Edinburgh publishers, particularly by Blackwood and the Blacks. For the former he wrote several articles on scientific agriculture, to three of which the Highland Society awarded their gold medal, twice for his

* Edin. Blackwood, 1834.

† Vols. 1 to 7 of Entomology, forming vols. 33, 35, 39, 40, 36, 38, 37 of the general series.

investigation into the causes of the turnip disease, and the third for his description of the pinetum at Minto. One of his most laborious as it was the latest of his performances, was the preparation of the index for the last edition of the "Encyclopædia Britannica," to the successful completion of which the Messrs. Black bear the most flattering testimony, whilst they regret that death had deprived them of his farther services. The same cause prevented the preparation of a local flora for Jeffrey's History of Roxburghshire, but he contributed the chapter on the geology of the county. He was also engaged on a complete edition of Leyden's Works which was never finished, and it was chiefly owing to his enthusiasm for the fame of his fellow-townsmen, that the monument which he just lived to see inaugurated, was brought to a successful completion.

I cannot close this notice without adverting to another worthy son of Denholm, a member of the club, whose description of the physical characters of the neighbourhood I read after breakfast this morning. Mr. J. A. H. Murray's knowledge of the natural features and products of the district as well as of its ancient history and antiquities is unrivalled. Some of this lore has been communicated in a series of valuable papers to the Archæological Society of Hawick, and I hope a fitting career may be opened to him for the exercise of talents which are capable of adding largely not only to our stores of local information but to those of society at large. I am indebted to him for many of the facts embodied in this paper, and I must express my regret that he has not been able to be present to-day to have elucidated them himself, more fully than I have been able to do.

For the following statistics of the village I am indebted to the kindness of Mr. Douglas of Cavers:—

I. *Area*.—1. The original feus (or auld yairds) were granted by Sir Archibald Douglas, about 1664, to 47 persons, and comprised a space of about $8\frac{3}{4}$ acres. By subsequent alterations and subdivisions the feus are now held by 60 persons, exclusive of 2 feus appropriated to the school and schoolmaster's house and to the Hassendean road.

2. The land given in exchange for the right of casting peat,* in 1836, (called the new yairds), is about 6 acres, in all according to the ordnance survey .. acres 16·133

* It seems doubtful whether there was ever any common pasture properly so called. When the peat moss was parcelled out among the feuars, the lots were marked by heaps of stones, some of which still remain.

3. Area of road way	1·777
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acres 17·910

4. Area of the Green, both enclosures	..		3·640
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acres 21·559

Total area of the old village ..

5. The present proprietor has, since 1862, assigned certain additional lands to the inhabitants for gardens and spade cultivation on annual lease, at £3 an acre, viz: 75 gardens at 7s. 6d., each, 27 at 5s. each, 11 at various sums, with about 5 acres still unappropriated ..

acres 39·481

II. *Feu Duties and Rents.*—1. Old feu duties at 1s. 1½d. per annum ..

£	s.	d.
2	12	2½

N.B.—On account of the smallness of the sums these are collected every third year only.

2. Annual rent of the Green for pasturage	19	0	0
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This forms a fund for improvements, out of which the committee of feuars recently contributed £100 to the new bridge and its approaches across the Teviot.

3. Rents of new gardens of 1862	..	40	10	0
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III. *Houses as per Census of 1861.*

Inhabited	98
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Uninhabited	1
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Building	1
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100

Rooms with glazed windows	..	317
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IV. *Population.*

Males	399
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Females	367
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766

Children attending school from 5 to

15 years of age	146
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V. *Occupations.*

Masons 55, Stocking-weavers 32, Labourers 32, Joiners 12, Shoemakers 11, Grocers 10, Tailors 9, Millwrights 7, Blacksmiths 3, Publicans 3, Bakers 4, Drapers 2, Butchers 2, Saddlers 2, Ministers of religion 2, Schoolmaster 1, Schoolmaster's assistant 1, Schoolmistress 1, Doctor 1, Police Constable 1.

Natural History of Denholm. By J. A. H. MURRAY, F.E.I.S.

DENHOLM is situated upon a platform of the newer boulder clay, which here, as in so many other parts of the valley, overlies the old red sandstone of Teviotdale, and an excellent section of which is seen in the scaur below the new bridge across the Teviot. The old red sandstone strata occupy the centre of the county, apparently filling up a hollow or depression in the Silurian rocks which form the bottom strata of the southern counties of Scotland. By pursuing the course of the Teviot for a mile above the village, the limits of the formation are reached, the boundary line between it and the old red extending south from the east of the Eildons to Hassendean, touching the Teviot near Hassendean burn, then retreating from it again so as to follow the line of elevated ground by Teviotbank, below which it crosses the Teviot and proceeds nearly by Little Cavers, East Middle, and Whittriggs, southward along the western border of the Rule valley, up which a long and narrow prolongation of this rock system runs as far as Windburgh. Sections shewing the junction of the greywacke with the bottom beds of the sandstone are seen in the Hassendean burn, a short distance below the station, and also in one of the rivulets feeding the Denholm dean burn on the north-west edge of Ruberslaw. The red sandstone, as developed in the neighbourhood, shews as its lowest member a thick bed of conglomerate formed of pebbles of quartz and graywacke, which can be well examined in the Hassendean burn and in the upper part of Denholm dean. Above this lies a vast thickness of those crumbly red-brown beds so characteristically shewn in the banks of the Jed, and which form the steep scaurs overhanging the burn in Denholm dean. Higher up, but preserved from the effects of the mighty denudations which have swept the valley, only in the vicinity of trap and other igneous rocks, occur beds of massive sandstone, red, yellow, and white, available as a building stone, and containing, though sparingly, fossil remains of characteristic Devonian forms of plant and animal life, such as ferns (apparently *Cyclopteris*), ligneous stems, and scales and other portions of *Holoptychius*.* On

* Specimens of the fossils from the Denholm Hill sandstone were exhibited to the meeting by Mr. Ferguson, who is thoroughly acquainted with the geology of these strata. No traces of organisms have yet been found in the Silurian rocks at Cavers, Kirkton, and elsewhere to the west of Denholm, though the higher part of the Teviot vale above Hawick has afforded rare indication of protozoic existence. Nor have the boulder clays which bound the river in so many places yielded any remains of the life of the Post-Tertiary era. The

the south side of the valley these strata are well seen at the Denholm dean quarries, where both the red and white beds have been long worked; in a glen or burn on the Tower farm, which forms the boundary between the cultivated ground and moorland along the northern base of Ruberslaw; and at Bedrule; and on the north side of the Teviot in the glen at Minto, where softer beds of the rocks are also quarried as indifferent building materials. In the neighbourhood of Minto Hill the beds seem to be inclined toward that elevation; but on the flanks of Ruberslaw the strata are seen to strike out from the hill horizontally into mid air, affording evidence of the prodigious denudation which has in the valley swept away about a thousand feet of the rock. Numerous elevations of trap and greenstone rise above the stratified beds all around, of which Ruberslaw, Minto Crag, Minto Hill, and the ridge between Denholm and Ruberslaw known as the Hillhead (where this rock is quarried as road metal) are the chief. Interesting points of contrast are afforded by all these trap-pean masses, the rock being in Minto Crag almost basaltic, and still more so on the southern summit of Ruberslaw, while at Minto Hill it is more of the nature of a trap-tufa. On Ruberslaw a mass of red crumbly tufa having the appearance of broken tiles, fills the depression between the two summits and has apparently formed the original mass of the hill, and been subsequently cut through by the more compact and columnar rock which forms the summits.

Denholm offers a convenient starting-point for various routes along which interesting plants may be observed. In the neighbourhood of the village, in various localities, *Cheledonium majus*, a denizen, and *Malva moschata*, neither of them very common in the district, are found. In Denholm dean one or two rare species occur, among which *Neottia Nidus-avis*, occurring among the mossy herbage on the left side of the pathway near the scaurs on the south side, and *Melampyrum sylvaticum*, an interesting parasite found under the shade of that noble pine "The Queen of the Dean," claim the chief rank. *Polygonum Bistorta*, *Lysimachia nemorum*, *Pyrola media*, and *Campanula latifolia* are found in several localities. The *Veronica montana* so often mistaken for *V. Chamædryas* occurs in the cart road near Peden's

summit of Ruberslaw, however, will be examined with interest by those who are engaged with the glacial phenomena of the drift period—the late Mr. Kemp of Galashiels having found in its terraces some of the data on which he founded his views as to the successive levels of the sea during the glacial period.

Vale; *Spiræa salicifolia*, below the cottage; *Gagea lutea* across the burn above the cottage, where *Circæa lutetiana* is abundant. *Epipactis latifolia* is rather common near the foot of the dean, where *Orchis mascula* will be at present (May) in full bloom. Various forms of the prickly ferns *Aspidium aculeatum* and *lobatum* are abundant; *Scolopendrium officinale*, rare in such an inland district, is also found on the moist banks. *Euonymus Europæus* overhangs the burn in several places, while at every step more common but not less beautiful denizens of the woods will meet the view. Denholm dean is at its loveliest in the end of May and beginning of June: then the Forget-me-not literally borders the walks for miles, the Woodruff peeps from behind the decaying trunk, the Primrose still lingers in the shade, and the Red Campion blushes on the bank, while overhead the Wild Cherry, Hagberry, Rowan, Laburnum, and Hawthorn at once delight the eye and scent the breeze. Emerging from the Dean-head and ascending Ruberslaw, whose truly Alpine aspect cannot fail to strike the eye, various ferns are met with, among which *Botrychium Lunaria* claims notice. Trailing among the heather two Lycopods, *L. clavatum* and *L. alpinum*, the latter confined to the eastern side of the hill toward Wells, will be found; two smaller species, *L. Selago* and *L. selaginoides* occur where the soil is more peaty. In the wetter parts *Drosera rotundifolia* and *Narthecium ossifragum* share the empire with *Eriophorum* and several species of *Carex*. *Polypodium Dryopteris*, *Aspidium recurvum*, and *Cystopteris fragilis* grow among the rocks of the summit. The beautiful little *Gentiana Amarella* occurs among fine short grass near the base, and *Listera cordata* among the heath near the plantation midway up the hill above the quarries.

Several interesting aquatic plants of the genera *Carex*, *Typha*, and *Sparganium* occur near the banks of the Teviot at the cauld, and about the marshes below the Haugh farm. Near the river side here, also used to occur *Euphorbia esula*, but now I fear destroyed by an inroad of the Teviot. From this locality it was taken by the late Andrew Scott, a native botanist, and introduced between Melrose and Darnick where it is now abundant by the wayside. *Tragopogon minor* occurs about the mouth of the Manse burn, but is singularly capricious in its distribution. Higher up the same burn, near Hassendean, commences the area of *Silau pratensis*, and *Sanguisorba officinalis*, which extend all over the elevated

track between the Teviot and the Tweed. Midway along Minto banks the curious parasitical *Lathræa squamaria* will be found abundant at one spot. *Doronicum Pardalianches*, *Impatiens Noli-me-tangere*, and *Helleborus fœtidus* also occur in the glen, more than doubtfully native, which is all that can be said of them anywhere in Britain perhaps. A genuine instance of naturalisation will be seen in *Mimulus luteus*, which carpets the glen in some damp places. We may account for it here, but how shall we explain its also carpeting the remote wilds of Glencoe? In connection with these instances of the diffusion of new plants, not only within the human period but since a very recent and well-ascertained date, I may remark that *Eschcoltzia Californica* is already knocking for admission into the British flora, covering as it does miles of railway embankment and chalk downs in Kent. Indeed, in a clover field near Maidstone, I have seen it more abundant than the clover. And yet *Eschcoltzia Californica* is nearly as recent in Britain as Californian gold. Returning to our undoubted aborigines, Minto Crags present us with several interesting rock species. *Lychnis viscosa*, *Dianthus deltoides*, *Arabis hirsuta*, *Senecio viscosa*, *Geranium sanguineum*, and *Viola hirta* occur at the west end of Dhu Crag, and *Spiræa salicifolia* on the level below. But the plants of most interest at the Crags are the ferns, notably the *Asplenium*. Not to mention the *A. Adiantum-nigrum* frequent all over their face, Dhu Crag yields in abundance *A. septentrionale*, and the still rarer *A. alternifolium* will reward with its coveted fronds the diligent explorer. The chief specimens of the last-named, shortly after it was discovered by me twelve years ago, were eradicated by the mercenary cupidity of a neighbouring gardener. A few fronds were, however, found three years ago when Professor Balfour visited the locality. The woods of Minto are not less interesting in their display of common floral beauties than Denholm dean, and either route will in many ways amply repay the botanical Rambler.

For the entomologists I append the following list of butterflies observed in the neighbourhood of Denholm:—

<i>Pieris Brassicæ</i> .	<i>P. Rapæ</i> .	<i>P.</i>	<i>Vanessa Atalanta</i> , abundant.
<i>Napi</i> .			<i>V. Io</i> . (Peacock) periodical, in dry summer of 1857 swarmed everywhere. <i>V. Urticæ</i> .
<i>Anthocaris Cardamines</i> .			
<i>Lasiommata Megæra</i> .	The		
Haugh, scarce.			
<i>Cynthia Cardui</i> , scarce.			<i>Grapta C-album</i> , scarce.

Hipparchia Semele, Minto
Crags. *H. Janira*. *H.*
Hyperanthus, very abund-
ant about Cavers, &c.
Erebia Blandina. Scotch Ring-
let, very abundant on
Minto Crags, &c.
Cænonympha Pamphilus.
Nemeobius Lucina. (The Duke)
foot of Ruberslaw.

Argynnis Lathonia. Minto.
Melitæa Artemis. Swarms on
one or two heaths near
Newlands and Linthill.
Chrysophanus Phlæas.
Polyommatus Alsus. (Bedford
Blue), uplands near Ha-
wick. *P. Alexis*. *P. Arta-*
xerxes. Hills around
Hawick, abundant.

*Illustrations of Ancient Customs and Superstitions, extracted
from the Records of the Presbytery of Kelso, 1609—1687.*
By the Rev. THOMAS LEISHMAN, of Linton.

THE four manuscript volumes from which the following extracts are taken belong to a class of records whose value has never been sufficiently recognised. The common opinion is, that they are of no interest except to the ecclesiastical antiquary. If it were so, they would hardly come within the range of subjects open to the investigation of our club. But a very little study of them shows that they cast innumerable side-lights on other fields of enquiry. They abound in picturesque details, illustrative of the manners, speech, occupations, and amusements of our forefathers, and in facts for which the genealogist or local historian may search elsewhere in vain. It is to be regretted, that out of nearly a hundred sets of such records preserved throughout Scotland, scarcely a tenth have been protected from the risks of accident or decay by having their more valuable contents printed.

The Kelso Records extend, in nearly unbroken continuity, from the year 1609 to the present day. For it may be necessary to remind you, that the inferior church courts of Scotland had their forms and constitution little affected by changes in church government. Whether bishop or assembly ruled, the parochial clergy met regularly in presbytery, to discuss theology at the *exercise*, to administer discipline, and enforce the duties and rights of the Kirk within their bounds. The most marked distinction between the two periods is, that the minutes are fuller in Presbyterian than in Episcopal times. The object of this paper is to bring before you one particular class of extracts. But first let me show, by a few examples, what material of more varied interest is to be found embedded among the details of ecclesiastical processes, which fill most of these mouldering pages.

There are frequent references to the old families of the district—the house of Roxburgh with its numerous cadets, the Kers of Greenhead, Lochtour, Linton, Sunlaws, Cavers, Gateshaw, Graden, the earls of Home, the lairds of Riddell and Mowe, the McDougalls, Pringles, and Rutherford. Sometimes family and national history are mingled, as in the examination of those who took a prominent part in Montrose's unsuccessful attempt to raise the eastern Borderers for the King, immediately before the battle of Philiphaugh. In 1656, there is recorded an application from Montrose's son, when about to be married to Lady Roxburgh, to have the banns proclaimed with his honours, "in the ordinarie way of noblemen of his ranke." The difficulty caused by the family attainder was avoided by a special permission to marry without proclamation. Now and then we catch glimpses of important contemporary events. The minister of Stitches is rebuked for having, on a certain Sunday, reported in his pulpit "that there had ane fearfull destruction com upon our armie," and the matter drops with his excuse that "the news cam out of the Laird's house." But, on observing the date, we find that it was the Sunday after Marston Moor, where a defeat was turned into a victory. The earlier news, before it reached the Border, had completely outstripped the later. How aptly does this illustrate the scene in *Rokeby*, where Bertram brings to Wycliffe the tidings of the royalist success, and tells—

"How many a bonny Scot, aghast,
Spurring his palfry northward, past,
Cursing the day when zeal or meed
First lured their Leslie o'er the Tweed."

One might almost construct a census return for the year 1646 from the following lists of communicants in the different parishes of the presbytery:—Kelso, 1500; Sprouston, 750; Eduam, 340; Stitches and Home, 560; Makerston, 240; Roxburgh, 550; Linton, 260; Morebattle, 730; Yetholm, 300; with the neighbouring parishes of Crailing, 360; Eckford, 520. In that age of universal and compulsory conformity, these numbers must have represented the whole adult population.

An act of Assembly in 1588, forbidding burials within places of worship, was, as might be expected, long resisted by a nation keenly alive to ancestral associations. Cases of discipline arising out of this were of frequent occurrence. In one instance, the Davisons and Burnes, two families who

seem to have occupied numerous small holdings between Sprouston and Bowmont water, broke into Sprouston kirk, and buried there — Davison, the wife of Charlie Burne. The offenders, after being remitted to the diocesan synod, are sent back to the presbytery “to mak their repentance *in lino*” and pay among them £50. There is a simple pathos in the confessions of the husband and son. “Charlie Burne, being posit whither he himself helpit to lay his wyf in the Queir of Sproustone, anserit, that he did it not, and affirmit that he went not in the kirk that day, bot it was done be his knowledg and speciall consent. Jhone Burne grantit that he helpit to carie in his mother to the kirk, and lay her in the grave.” Much less submissive was the bearing of a dependant of Sir William McDougall, who had helped to bury his master in Makerston kirk. “Johne Milne tooke the fault upon him, and said he wold have broken up the kirk dore albeit the brethren had beine at the bak of it.”

But let me now, without further preface, read a series of extracts, illustrative of customs and superstitions prevailing in the seventeenth century.

May 17, 1610 and subsequent meetings. The following persons are proceeded against for “open contempt and abuse of the Sabothe, being the cheiff actors of the Pasche playes in Lintoun, Jhone Midlemist of Scharpesrig, scheriff, George Davidstone in Hoisla, litel Jhone, George Ker in Lintoune, Robene Hud, Hob Hewme, lord, plewman to the laird of Lintoun, elder Geordie Young in Hoisla, and Wattie Ker.”

October 28, 1623. “Compered Katerine Taillour being accused for turning the riddell. She wald confess no more bot that she had the riddell in her hand with Johne Mader.”

Sep. 1, 1635. James Mow in Atonburn confessed consulting with a witch in Etal. “He told the man the natur of his sonnes distress, who gave him for medecin ane little papper, whilk he shew before the brethren, on the whilk was written the beginning of the first chap. of St. John and the name of Jesu written four tymes.” He is to make his repentance *in sacco*.

Sep. 17, 1639. “Compeared Jonet Robson, spouse to Thomas Craighil in Heyhoup, and confesseth that she called Meg Russel, spouse to John Tait in Heyhoup, a witch. Being enquired, what ground, she saith that on a Sunday, some six weeks or thereby since, when they were going to kirk, she saw her set on a fyre within the byre dore flore, and caused

her daughter dryve a new calfit cow thorow the same, and thereafter the daughter turned it round about withershinnes, and soe let it goe to the fieldes."

Sep. 14, 1641. "No exercise, because of the wholl people of Kelso for the most pairt being at Jedburgh fair." [The Rood Day fair, still kept on the 25th September, N.S.]

March 22, 1642. "The brethren, finding the abuse of the Lord's Day by playeing at football, catch, nyneholls, new boulls, and other gameing, after sermones, whereby God is offended, and the tyme misspent," resolve that offenders shall pay for each offence twenty shillings to the poor, and make public repentance.

May 24, 1642. "No exercise to-day, because there was no auditors, in respect both the inhabitants and strangers were causit beitt, and also did beitt drumes, about the cross, fro aught of cloak in the morning till after eleven houres, in honour of their race of Bernintoun."

July 13, 1642. "Mr. Somervell [Ednam] compleans of his parochiners for abuseing of the kirk at footeball on Fastern's Even. It is ordained that they shall not trouble the kirk with their footeball at that tyme or any tyme."

June 25, 1642. "It was regrated by divers of the brethren, that they could not get bonfyers upon Midsummer Eve restrained, which being a relict of Papistrie in memorie of St. Johne, was against our sworne covenant, and the reformation now so laudably established."

August 27, 1644. "Reported certain of the brethren, that upon the day they call our Lady Day in August [the Assumption of the Virgin, August 15th] being the Lord's Day in Bridghim in the Mers there was such pyping, dancing, and drinking, as wes very scandalous."

Dec. 2, 1645. "For restraining the disorders of penny bridalls and laikwaikes, the brethren exprest their judgment that it was expedient that the number of persones at a penny bridall should not exceid four or five meises of people, and that they who caused transgressing therein should, for each meiss more than due, pay two sh: sterlin, and that the profane custom of the barbarous pipeing and danceing hitherto used was necessary to be restrained. And the number to be permitted at lakewakes, besyd the friends of the defunct most specially concerned, should not exceed six persones, and whosoever should invitt more than these, or whosoever should repair to and keip lakewakes not being specially invited, should pay ten merks penalty."

January 6, 1646. "Mr. William Weemes [Roxburgh] having required the advyce of the brethren, how to censure such persons who went in the habit apperalled as Gysarts on Yuill day, the brethren thought the woman delated by him should mak satisfactioun and public confession, and the boy to be corrected as a chyld by his parents."

June 23, 1646. "Patrick Tait, parochiner of Makerstone, challenged for saying that giff he got not his seck, whilk he wanted, he wold goe to the divell, and get it."

January 18, 1648. "Mr. William Weems acquaints the Presbyterie what had befallen ane woman in his paroch, how that shee, being with chyld, and having laboured in birth for a tyme, therafter left off, the women leaving hir, and she being in the hous at night, only one litle lass being with hir, she was carried away into the fields by ane number of women, as shee thought: whair being delivered, her chyld was taken from her, and shee againe brought home to the hous."

May 11, 1648. "Mr. William Weems, having craived the advyse of the brethren anent ane Robert Lumsden in Roxburgh, of whom it is reported that he had sought coore for his child of ane woman in Roxburgh, by chairming, and that he had craived directions from her, and returning home, ane foile dyed before his doare, and the chyld recovered. He is lykwayes reported to have used sick courses in tymes by-past for coore of ane other chyld, going to the same woman some thrie yeires ago."

May 30, 1648. "No exercise, because of want of auditors, all being at ane raice hard by Kelso."

May 30, 1648. "Robert Lumsden confessethe that he went to such ane woman, and asked her if shee could help his chyld, but denyes that he receaved any directiones from her. Item, he is questioned whither or no at ane other tyme, having ane other chyld sick, he went unto the same woman, and receaved directiones from her, shee asking him whither he had any dogs with him, for something, as she said, must go, wher unto he answered, that he had tuo, and whe of them he would lett goe? he answered the ould dog, whilk immediatly dyed. All this he denyes."

October 31, 1648. "Mr. William Penman [Morbattle] craives the advyse of the brethren anent the censur of charming, having caused summond Johne Douglas, a charmer of horse, before the Presbytery, who had confest the samen, and gave up his charm, as followes: *I raid, or I was claid; I raid, or I was fed; I raid, or I cam on the sea; Fercie theif, I*

connyer the in Gode's name; and that he deponed that he used to ryd the horses (betwixt tuo or three Lordes lands) that hes the fercie, and being asked, who learned him, he answered, that his mother told him, that or ever cloathes cam upon him, and or ever he gott meat, he did ryd upone ane hors."

May 1, 1649. "Anent Harrie Fall, Gipsie, his wyff and sister, they are ordeanit to mak repentance for and publick renunciation of that vagabond kynd of lyff, in Makerstoun, where they have taken house, and also in Roxborrow to mak ther repentance for particular faltes they ar ther guilty of, yet they are not to be admitted to the communion till they haiv given proof of the truth and sincerity of their professione."

August 14, 1649. Thomas Randall remitted to the session of Makerston for charming with two stones, which he applies "with some charmlike words."

Oct. 30, 1649. Tibbie Thomson in Morbattell confesses "charming and metting of the belt."

January 8, 1650. A letter from Mr William Turnbull [Makerston] "desyres some of our number to attend the judgeing and burning some witches within his parishe, Wednesday and Thursday, in his necessitate absence."

April 12, 1659. A woman in Roxburgh complains of a neighbour "who saide that she had taken away her kines milks, and after that she had come to the said complainer's doore, and sought it again for God's sake, it was founde as before, quhilk the party complained on compeiring confessed, who being inquyred how she knew to require it so againe, if any did teach her so, at last she declared that ther was another woman who told her that she had about ten years before done so to the same woman for some butter taken away also from her, and by that means she fand it again."

August 7, 1660. George Tait in Ednem complains that William Law in Ednem Mains, and Mark Aicheson his servant, consulted a woman in Berwick "for the spearing out of some stolen cornes," and that William Law declared that the said George Tait his wife stole away the corn.

Sep. 25, 1660. William Law says that at Berwick his brother's wife turned the key to find out the truth about the corns. He did not see it turned, but she made Mark Aicheson name over so many men and women in Ednem.

Nov. 6, 1660. "Michell Usher, or Wishart, at Sproustoun, and Mausie Ker, his wife, complean of John Brown, weaver ther, for calling him a warwoof, and her a witch."

Nov. 4, 1662. Robert Hoggart at Stichell charged with slandering Margaret M'Call, saying that he saw her appear in the likeness of a cat. He now declares "that he saw her sitting upon ane peise sheif in the fields when it was very dark."

Sep. 29, 1663. William Rae, Makerstoun, is summoned for consulting about stolen goods with "an Englishman in Lothian, who pretends to judicial astrologie."

August 6, 1672. James Burne denies that he said Helen Young made his kine give blood, but only that his servant said the kine did give blood.

July 6, 1675. Dand Burn and his wife Isobel in Morbattle ordered to appear in sackcloth for consultation, and John Hunter to be rebuked for compliance in so far as he spake the words which they desired.

Obituary Notices. By ROBERT EMBLETON, Surgeon.

PRIDEAUX JOHN SELBY, ESQ.

SINCE our last meeting, the club has to regret the deaths of two of its members. One, whose name will always be connected with natural history as long as the science is cultivated, and whose labours have shed no little honour upon our club during the time of his membership. Prideaux John Selby, Esq., of Twizell House, in the county of Northumberland, was born in Bondgate Street, Alnwick, on the 23rd of July, 1788. He was educated at Durham grammar school, and had for his cotemporaries Sir Roderick Murchison, the present eminent geologist, and Dr. Graham, the late master of Christ's College, Cambridge, and afterwards Bishop of Chester. From Durham school he went to University College, Oxford, where he passed the usual terms kept by an English country gentleman who had no intention of following any particular profession. He married, in 1810, the daughter of Bertram Mitford, Esq., of Mitford Castle, Northumberland, by whom he had three daughters, who survive him; and on taking up his residence at Twizell, about the year 1811, he began to show his predilections for those pursuits with which his name is so intimately connected; and by his taste and judgment in planting, and in the subsequent management of his estate, he soon made his abode one of the most picturesque in the county. Possessed of a naturally healthy and strong constitution, he entered into and enjoyed those sports which

characterize the English gentleman, and at the same time discharged all his duties not only as a magistrate but as one of the leading men of the county, in such a manner as insured him the respect of all classes. During these years, he had not, however, neglected his taste for natural history, and in 1821 appeared the first part of his work on ornithology, which at once raised him to the highest rank, not only as an artist but as a true ornithologist. This magnificent work was completed in 228 plates folio, in 1834; the figures of the birds are the result of his own hand, with the exception of 28 plates engraved by his brother-in-law, the present Admiral Mitford, whose name, for many years, was enrolled as one of the members of our club. I believe in every instance the plate was engraved from a specimen in his possession, so that the colouring of his plates, as well as the drawings, leave nothing to be desired. Two volumes of descriptive letterpress, equal to the merits of the portraits they describe, were published between 1825 and 1833. In 1832 he became a member of our club; and at the time of his death was, with the exception of Dr. William Baird and myself, the oldest member. He twice was elected president—in the years 1834 and 1844; and on referring to our Transactions, it will be seen how much the club is indebted to him for his many valuable and interesting papers. Besides these he contributed papers to the Transactions of the Wernerian Society of Edinburgh; the Transactions of the Linnæan and Zoological Societies; the Edinburgh Journal of the Natural History and Geographical Society; the Edinburgh Philosophical Journal; the Transactions of the Natural History Society of Newcastle-upon-Tyne; and in the reports of the British Association for 1834. In connection with Sir William Jardine, Bart., were published three volumes of Illustrations of Ornithology, being figures and descriptions of birds previously unrepresented; and to the Naturalists' Library, conducted by Sir Wm. Jardine, he contributed a volume upon pigeons, and another upon the parrots. In 1837 and 1838, in connection with Dr. Johnston and Sir Wm. Jardine, he became editor of the Magazine of Zoology and Botany, to which he contributed several papers; and of this magazine, now continued under the name of The Annals of Natural History, he was an editor to the time of his death. To the beautiful series of works on Natural History, published by Mr. Von Voerst, he supplied his well known and justly appreciated work upon "British Forest Trees;" the delineations being all drawn by his

own pencil, from living specimens, leave nothing to be desired; the botanical part, however, is capable of great improvement. He was a Fellow of the Royal Society of Edinburgh, and also of the Linnæan Society; and of many other natural history societies. In 1839 the University of Durham conferred the degree of M.A. upon him, *honoris causa*. He was, at one period, one of the most regular attendants at the meetings of the club; but, after the death of our lamented founder, he seldom came; his last appearance was at Belford in 1864. The first appearance of any impairment of his faculties was his loss of hearing; and up to within a few weeks of his death, which occurred on the 27th of March, 1867, he continued to take some interest in his favourite pursuits. He gradually sank without pain, the bodily functions outliving the mental. His remains rest in Bamburgh churchyard.

WILLIAM CHURCH, ESQ.,

In recording the death of William Church, Esq., of Bells Hill, in this county, and a nephew of Mr. Selby's, the club have to mourn the loss of one of its younger members. He became a member of our club in 1860, and had not at the time of his premature and most unexpected death contributed anything to our Transactions. He was by profession a barrister, and regularly attended the Northern Circuit. He died in London, on the 14th of April, 1867, in the 37th year of his age.

GEORGE SELBY, ESQ., CAPTAIN R.N.

At the meeting of our club, in June last, I noticed the death of two of the members of our club, viz., Mr. Selby of Twizell House, and of his nephew, Mr. Church, barrister, of Bells Hill; and I have now to record that in this short period the club have to regret the loss of another member of the same family in the person of Captain Selby, R.N., brother and uncle to the above. Captain Selby was born at Alnwick, on the 5th of November, 1789, and was the second son of George Selby, Esq., of Beal and Twizell House. He received his education at Durham school, at the same time as his brother; and he entered the navy on the 6th of January, 1804, as third class volunteer, on board the *Cerberus*, 32, Captain William Selby. In March, 1805, he was rated as a midshipman, and served for some time on the Guernsey station, under the flag of Sir James Saumarez; from this he went to the West Indies, where on the night of the 2nd of

January, 1807, we find him assisting in the boats, and highly extolled for his bravery, at the cutting out of two of the enemy's vessels, under a most tremendous fire from the batteries, near Pearl Rock, Martinique, which killed two and wounded ten of the crew, including Lieutenant W. Coote, who conducted the expedition. In July, 1808, he removed to the *Leviathan*, 74, Captain J. Harvey, and proceeded to the Mediterranean, where, in October, 1809, he aided in causing the self-destruction of the French ships of the line, *Robuste* and *Lion*, off Cape Cette. On 20th of May, 1811, he was confirmed a Lieutenant after four months' service in the *Circe*, 32, Captain Woolcombe; in March, 1812, he returned home on leave of absence. His last appointments were 26th February, 1813, to the *Ville de Paris*, and from this ship to the *Boyne*, 98, on the 8th of March, following, both under the command of Captain Burlton, in the Channel and Mediterranean. On the 22nd September, 1814, he joined the *Urgent*, 14, Captain Fitzmaurice, in the Channel. On the 22nd November, 1814, he joined the *Cornwallis*, 74, flagship, on the East Indies, of his former captain, then Rear-Admiral Burlton; and, in October, 1815, as First-Lieutenant in the *Wellesley*, 74, Captain Bayley. In the *Boyne* he shared, 13th February, 1814, in Sir Edward Pellew's rencontre with the French Toulon fleet; on which occasion that ship bore the brunt of the engagement for half-an-hour, close in shore, and immediately under the enemy's batteries, two of the crew being killed and forty wounded, and the vessel much damaged in the hull, masts, and rigging. He returned home in the *Wellesley* from the East Indies, in 1816, and, on account of the extreme illness of the captain, the command of the ship devolved upon him. From this time he remained unemployed, and was made retired commander in 1850. Shortly after this, he entered as Fellow Commoner Christ Church, Cambridge, and took the degree of B.A. in 1820. In October, 1840, he married Mary Anne, eldest daughter of the Rev. Charles Thomson of Howick, chaplain to Earl Grey, and settled on his property at Belle Vue, Alnwick. He became a J.P. for the county, and, during the remainder of his life, discharged its duties with zeal and fidelity. As a gentleman and friend he was beloved and respected, and as a supporter of the charities and schools of the town and neighbourhood, his hand was ever ready; and in him, the poor and helpless have lost a generous and loving benefactor. He became a member of our club in October, 1856, and, although

embued with a great love for natural history in general, he did not prefer any particular department, nor did he contribute any papers to the Transactions of the club. In the month of November, 1866, he lost his beloved wife; after which he daily declined in health and spirits till the 23rd of June last, when he most peacefully and calmly, in sure faith and hope, resigned his spirit to God.

ROBERT HOME, ESQ., SOLICITOR, BERWICK.

Since the last meeting of our club, the loss of one, whose kind and benevolent countenance will long linger in the memory of those who enjoyed his friendship, we have all to deplore. Mr. Home was born in Horncliffe, on the 22nd of June, 1792, and was educated at the parish school of Gattenside, near Melrose. At the age of fourteen he came to Berwick, and was entered as a law clerk, in the office of the late William Willoughby, Esq., and after the expiration of his indenture he became entitled to the freedom of the borough. His attention to business, and the uprightness of his character, soon gained the confidence of his master, who took him into partnership, and thus laid the foundation for his future professional eminence and success. Whilst completing his studies in London, he became acquainted with Dr. Waugh, an eminent divine, whose eldest daughter he afterwards married; and who, for nearly forty years, proved herself worthy of the love of such a man; she died very suddenly at Glasgow, about two years ago, at the house of her son-in-law, Professor Eadie. Their second daughter, who also survives, is married to an Irish gentleman. Mr. Home was in conversation very attractive; he had read much, and you very soon perceived how varied his studies must have been; yet, this only served to show more clearly the freshness of his humour and the kindliness of his heart, and these qualities seemed to increase in strength as years stole on. In every department of life with which he was connected, the true philanthropist and upright christian shone pre-eminently. One who had known him from the time he came to Berwick to the day of his death, writes me—"I never knew any man so near perfection as he was, and so well prepared for his change to a better world." He held several civil appointments; in 1842 he was appointed superintendent registrar of deaths, marriages, &c., clerk to the harbour commissioners in 1847, and town clerk of the peace in 1849. On the 21st of September, 1865, he was presented by public subscription with his portrait,

which is now to be placed in the council chamber of the town, in which he so long officiated. In 1842 Mr. Home became one of the most regular attendants at our meetings, and no one seemed to enter into the enjoyment of those pleasant reunions more than he did—his fine old gentlemanly appearance will be long remembered. He was elected president of the club in October, 1851. For some months previous to his death his health had been indifferent, and for change of air he went to Melrose, a locality which was always dear to him from his boyhood. On the 3rd of September, whilst walking out, he was suddenly seized with difficulty of breathing from effusion, and died in an hour or two afterwards, in the seventy-fifth year of his age. His remains were interred in the cemetery at Berwick, and were followed to the grave by the members of the town council, the clergymen of every denomination, all the professional men, as well as by the greater part of the respectable inhabitants of the town. In him the poor and the needy had to mourn the loss of one, who was always ready to assist them in their hour of distress.

PATRICK CLAY, ESQ.

The club has also to record the death of one of its earlier members in the person of Patrick Clay, Esq., J.P., of New Mills, near Berwick, on July the 12th. He was elected a member of our club in May, 1847; but did not contribute any paper to our Transactions.

Miscellanea Botanica et Zoologica. By R. EMBLETON,

Trifolium elegans (Savi). Last autumn I gathered several specimens of this trefoil, in a field between Beadnel and North Sunderland: it had no doubt been introduced amongst the seed commonly sown.

Coracias garrula, the Roller. A very fine specimen of this very rare visitant was shot a few days ago, at Howick, by the gamekeeper. It is very curious that another specimen of this bird was found by the late Mr. George Moffatt, lying dead near the village of Howick, several years ago: I have often seen the specimen, but what has become of it I cannot say.

Trifolium hybridum, L. Alsike Clover. In a previous notice, I mentioned I had found, in fields near Beadnel, *Trif. elegans* of Savi; and in the last few days I have met with

Trif. hybridum of Linne in several spots near Tughall. In the last edition of British Botany, now publishing, these two species are admitted into the British flora as native species; *Trifolium elegans*, as a sub-species. It will, probably, be found on investigation, that both species are not uncommon within the limits of the club.

On Sunday evening, the 14th of July inst., five swans flew over my house, *southwards*; they were so low as to have been easily shot; but the sanctity of the day preserved them. It is difficult to account for their migration so late in the season.

The season, so far, (July 19th), has been remarkable for the almost total absence of *Lepidoptera*; not one of the common *V. Urticæ* has been noticed since one or two warm days in spring; and scarcely a white butterfly has been seen here. In my own garden, not a single caterpillar has been observed on either the cabbage or gooseberry genera. The only moth of interest observed has been the Humming Bird Moth; and a few specimens of the Painted Lady have been noticed.

Silybum Marianum, the Milk Thistle. This plant appears annually in various spots in the gardens of this village, and one that I allowed to grow this year has the following dimensions:—height, 6 feet 4 inches; circumference, 22 feet; circumference of the stem a few inches above the root, 14 inches; number of flowers that came to maturity, 653. Had this single plant been allowed to scatter its seed, how very soon it would have overrun and exterminated every minor plant.

Centaurea nigra, var. *radiata*, (*Bab*). I gathered a plant of this variety of the common knapweed on the road side between North Sunderland and Chathill. It is very conspicuous from the size and beauty of its flowers, the outer ones being barren and radiant. If persistent it would be well worth cultivating.

Spiræa filipendula. This plant appears occasionally in this district. I obtained a very fine specimen in July, at Tughall.

The following extracts, from a letter I received from my friend Mr. Hewitt Watson, whose name is sufficient to ensure attention from every botanist for any observations made by him, may, I hope, be thought not unworthy of being placed before the meeting, although not specially belonging to our club:—"It is curious how long we may go on seeing things which are different, without actually noticing their distinction. What plant is more frequent in our way than *Carduus*

arvensis? Yet, never until last year, did I notice the several differences, the species being sub-diœcious; the sub-male and the sub-female plants once compared together can never afterwards be confounded by a botanist.

So with the canine violets, which botanists of high repute and long experience still fail to distinguish, and yet the old *Viola canina* (of authors) has been divided and sub-divided into perfectly distinguishable species, thus—

Viola canina (Lin., With., & Smith, &c.)

1. *V. canina* (Fries., Bab., Syme, &c.)

2. *V. sylvatica* (Fries., Bab., Syme, &c.)

3. *V. Lybr. a Riviniana*.

b Reichinbachiana.

Sir Wm. Hooker, with a strong liking for ferns, could never seem to know *Lastræa dilatata*, *recurva*, and *spinulosa* apart; and yet not botanists only, but also gardeners and dealers readily separate them."

The following additions to the fauna of the district within the limits of our club, have been observed since the publication of Dr. Johnston's list of Fishes in vol. I., p. 170-176 of our Transactions.

CETACEA. *Balænoptera rostrata*. The first notice of this mammal was given by Dr. Johnston, in 1829, in the first vol. of the Transactions of the Natural History of Newcastle-on-Tyne. There is no mention of it having been observed since that time, until February, 1858, when a very fine specimen was fallen in with by the fishermen of Craster.

FISHES. *Sciæna Aquila*. *The Maigre*. A very fine specimen of this rare fish was obtained at Craster in 1847.

Diodon oblongus, the Oblong Sun Fish. In 1849, a specimen of this very rare fish was found floating between Embleton and Craster. Several days elapsed before I was informed of it, and then it was past preservation. Having in my possession a specimen of the short Sun Fish, obtained from the same locality, it would have given an opportunity of comparing the differences between the two species.

Gymnetrus Banksii, Ribbon Fish. In 1845, a specimen of this very peculiar fish was captured in Alnmouth Bay; after being exhibited round the neighbourhood for some days, it came into my possession, but was so sadly destroyed that all attempts at preservation were fruitless.

The past summer in this locality has been not only remarkable for the paucity of the insect race, but also of many of our most familiar visitants. Scarcely a single blackbird or

thrush has visited our gardens ; and I cannot hear that a single nest of either has been seen. The fruit of the Rowan trees still remain untouched, although in previous years they have generally been devoured before this. Most of our migratory species have disappeared much sooner than usual, and they have not been nearly so numerous as they generally are.

A brief History of the Village of Cornhill. By Rev. S. A. FYLER, M.A., Vicar.

THIS village, the last on the Borders before entering Scotland, having been anciently part of the patrimony of St. Cuthbert and of the palatinate of Durham, (to which it was probably annexed by Oswald, king of Northumbria, in the seventh century), was formerly, for political purposes, united with the county of Durham; from which it was separated by Act of Parliament in 1844, and then united with Northumberland.

The final syllable "hill," in Cornhill, was formerly written "hall," having probably been the "*aula*" or hall of some ancient settler, whose name has long since passed into oblivion ; the former syllable being probably derived from the abundance of "corn" which the soil produced. It was also, sometimes, formerly spelt Cornell, Cornale, and Cornhulle.

The church of Cornhill, dedicated to St. Helen, the mother of Constantine the Great, the first christian emperor, (supposed to have been an English lady,) was formerly a chapel of ease to Norham ; and first erected, probably, when Norham became the property of the monks of Durham, in 1082. It was confirmed to the monks of Durham in 1228, by Bishop Poor ; and again in 1230, by Pope Gregory IX. It was, however, separated from Norham, and made a distinct benefice in 1730.

The church was rebuilt in 1750, and opened July 12th, 1752, on which occasion Archdeacon Sharp, Prebendary of Durham, preached. Upon demolishing the old fabric, an Ancient British grave was discovered, made of stone, of about eight feet in length, containing two urns (after the usual fashion in northern countries) placed in a cavity. The leg bones and skull of a person of great size were found therein.

The church of 1750, being in a very dilapidated condition, and having been rebuilt without any regard to ecclesiastical architecture, was almost wholly pulled down, enlarged, and

re-erected, after the early English style, in 1840, by the present incumbent, at the cost of nearly £600, entirely collected by voluntary subscriptions.

A suitable chancel was added in 1866, which, with other improvements, cost rather more than £500. It was first opened on the 23rd December of that year, when the Archdeacon of Lindisfarne (Hamilton), preached. On which occasion also, a handsome new font was presented to the church by the Countess of Home, and beautiful kneeling cushions for the entire length of the communion rails, the north and south end of the altar table, and round the font, were worked by different ladies of the congregation.

The names of the several clergymen who have officiated here since 1241 are on record; and amongst these, about the middle of the seventeenth century, was the Rev. Henry Erskine, (a scion of the Mar family,) whose sons were the founders of the Scottish Secession Church. He is said to have received no stipend, and went to London to plead his cause before Charles II., but without success. He left at the passing of the Act of Uniformity in 1662. A monument is erected to his memory at Dryburgh, his native place, near to the burial-place of Sir Walter Scott, Bart.

A good school-room was erected in 1837, and a master's house in 1860.

This living was constituted a vicarage by the Ecclesiastical Commissioners, April 26th, 1866.

Cornhill was anciently held in "demesne" under the castle of Norham, and was let for £12 a year.

Bishop Pudsey soon afterwards gave it in exchange for Horncliffe, to the ancestors of William de Cornhall, to which latter person it was confirmed in 1233.

The descendants of the families of Heron and Swinhoe, possessed it in 1631.

In 1670, the principal proprietors were John Foster and Wm. Armorer, of the family of Armorer of Belford. The estate of the Fosters afterwards passed, by intermarriage, into the family of Collingwood, while that of the Armorer's fell into the hands of the Blakes of Twizel.

There was a tower or castle at Cornhill from a very early date, for the protection, probably, of the ford, as well as village and neighbourhood. It was taken and destroyed in 1335, by the Earl of Fife, but rebuilt by the Swinhoes; and is described in 1542, (Border survey,) as "newe and embattled, covered, and put into good reparicion, by one Gilbert

Swinhoe, gentleman, The owner and Inheritor of the said Tower and Town of Cornhill."

Seven years later this tower was taken by the French general D'Esse at the head of a troop of Scots, who found it well stored with provisions, and especially salted salmon. It was standing in 1560.

It is probable that the present residence of the Collingwood family was erected by the Fosters upon its site.

The foundation of a handsome bridge, over the river Tweed, was laid May 24th, 1763.

About a mile to the east of Coldstream bridge, and nearly opposite to the old ford of Lennel, are the grass-covered remains of another ancient Border fortlet or pele tower, commonly called "Castleton (a corruption, perhaps, of Castlestone) Nich," frequently taken and re-taken during the Border wars; and supposed to have been erected about 1121, when Norham Castle was built by Bishop Flambard.

About three miles to the south-east of Coldstream bridge stands the old and beautiful bridge of Twizel, over which the vanguards of the English army is said to have passed before the battle of Flodden. It consists of a single semicircular arch of 90 feet span, and the height from the top of the battlement to the water is about 42 feet.

Still further on, to the south, are the remains of Castle Heaton, (anciently belonging to a family of that name); it afterwards passed into the honourable family of Grey, but now belongs to the Earl of Tankerville, a branch of the same family. This castle was destroyed by the Scots, in the reign of Henry VII., and never subsequently rebuilt. Just below it is a ford over the river Till, through which another portion of the English army is said to have crossed, previous to the engagement at Flodden.

Near to the confluence of the rivers Till and Tweed, anciently stood the domestic chapel of the lords of the manor of Tilmouth, dedicated to St. Catherine, and a donative in their gift, erected on a site near to which the remains of St. Cuthbert, the sixth bishop of Lindisfarne, are supposed to have landed in a stone boat from Melrose, about the ninth century; which circumstance is thus alluded to by Sir Walter Scott in his poem of *Marmion*—

" Not there, his relics might repose ;
For wondrous tale to tell !—
In his stone coffin, forth he rides,
(A ponderous bark for river tides ;)
Yet light as gossamer it glides,
Downward to Tilmouth cell."

The Rev. Robert Lamb, formerly vicar of Norham, gives the exact dimensions of this boat, which it is calculated (on hydrostatical principles) might not only have floated but carried the body of the saint, provided that it did not exceed 12 stones in weight. It is stated to have been 9 feet in length, 4 broad at the widest part, and 15 inches deep, and its sides and bottom to have been 4 inches thick.

Writing in 1773, the Rev. Robert Lamb further remarks, that "not many years since a farmer at Cornhill coveted the saint's stone-boat, in order to keep pickled beef in. Before this profane loon could convey it away, the saint came in the night and broke it in pieces, which now lie at St. Cuthbert's Chapel, to please the curious and confute the unbeliever." A portion of it has since been reported to have been employed by a farmer at St. Cuthberts to repair his pig sty. The writer of this, many years ago, saw at Tilmouth Park what were said to be parts of this boat.

During the last century the late Sir Francis Blake erected, on the site of the former chapel, a small edifice with pointed windows, now a ruin.

The banks of the river Till, which divides this parish from Norham, are very beautiful on both sides, being steep and well covered with rock and hanging wood. On a high and rocky eminence, near Twizel bridge, is a large castle of modern Gothic, commenced by the father of the late Sir Francis Blake, Bart., the exterior of which has recently been completed by Mrs. Stag Blake, the sister of the last baronet. A little to the left of Twizel bridge, near the banks of the river, is St. Helen's Well, commonly called the "wishing well," where St. Cuthbert was supposed, in superstitious times, to have granted the desires of those who drank thereof with becoming devotion to his name; and of its waters the English army is reported to have drank, on its way to Flodden Field. About a mile to the west of Tilmouth was, anciently, an encampment, now called "Haly Chesters."

The history of the manor of Tilmouth commences from a very early date. Osbert, who succeeded to the throne of Northumberland in 854, took it by force from the ancient see of Lindisfarne; but this sacrilegious monarch having been slain by the Danes it reverted to the church. It subsequently belonged to the family of Rydell. In the partition of the estates of Sir Wm. Rydell, in 1335, the chief part thereof fell to Sir Clavering; but Sir Francis Blake, Bart., appears to have possessed the whole about the middle of last century.

Harper Rig and Melkington were formerly parts of the manor of Tilmouth, but were alienated therefrom by the Claverings. In 1425 they were held of Sir John Clavering, knight, by Henry Redale, a descendant of the old lords of Tilmouth, at the yearly rent of a pound of cumin or two pence. Melkington was formerly written *Millenden*, and again *Melkingdune*, the final syllable *dun* (or hill) evidently signifying the elevated position on which the mansion house (now the property of Mr. Wm. Smith) was built. About a mile to the south of the village are the remains of an encampment or barrow, the most remarkable, perhaps, to the north of the Roman wall, supposed to have been Ancient British and commonly now called Camp Field, or Kippie* Hill. It commands a beautiful view of the surrounding scenery—of Wark and Home castles and the fords of the Tweed.

In the middle of a wood contiguous to it is a very cold and pure spring, whose waters are reported to be beneficial in the scurvy and gravel. There used to be a bath house there, now destroyed.

But to return whence we started, viz., to the parish church of Cornhill. In its burial ground there is this singular inscription, in Latin, almost now illegible, which may be thus translated: "Alas, who shall now retard the scythe of death? James Purdy, at the bridge of Twizel, was an excellent old man, although not exempt from diseases. He died on the 4th day of December, 1752, aged 81 years, and together with Jane his wife and Eleanor his grand-daughter lies under this stone. But, passenger, if thou hast a good heart, perhaps thou mayest live. Samuel, the son of James, survives, and is healthy, and exercising the profession of his father, under his paternal roof. If thou seekest health,—Go thither!"

* There are several other places in this county, commanding a good view, called "Kippie" or "Kipp" Hill; perhaps from the Celtic "Cip," "Cipis," to snatch or take, and "Olwg," a view. See notes on the Roman roads, by H. Maclauchlan, honorary member of the Society of Antiquaries at Newcastle.

*Sections of Mountain Limestone Strata at Scremerston, North
Northumberland. Communicated by GEORGE BAILES,
Colliery Viewer.*

Section sunk through in the Jack Tarr Pit, Greenwich Colliery, Scremerston.

		Fm.	Ft.	In.	Fm.	Ft.	In.
1	Soil		1	0			
2	Clay		3	0			
3	Soft brown freestone		3	10			
4	Blue metal	1	4	8			
5	Limestone (<i>Woodend</i>)	1	1	0	4	1	6
6	Blue metal	2	2	0			
7	Coal			6			
8	White metal	1	2	0			
9	White freestone		4	0			
10	Blue metal bands		1	0			
11	Blue metal			6			
12	Coal			6			
13	White freestone		5	0			
14	Freestone bands		2	0			
15	Tills		4	6			
16	Freestone bands		2	0			
17	Coal		1	8	7	1	8
18	White freestone		5	4	11	3	2
19	Freestone		2	0			
20	Blue metal		5	1			
21	Coal			2			
22	Soft grey freestone		3	3			
23	White do.	1	5	4			
24	Freestone bands	1	3	0			
25	Hard tills	3	3	0			
26	Limestone (<i>Dun stone</i>)	1	1	0			
27	Coal		1	2	10	5	4
28	White metal		4	4	22	2	6
29	Hard freestone	1	2	2			
30	White metal		3	0			
31	Freestone and tills	5	5	0			
32	Soft white freestone	13	5	6			
33	Coal (<i>Roby's</i>)		1	5	22	3	5
34	Metal and freestone bands	3		0	44	5	11
35	Soft black metal			6			
36	Soft blue metal	2		3			
37	Soft light blue do.	1	2	6			
38	Blue metal		3	10			
<i>Carried over</i>		7	1	1	44	5	11

350 Mr. G. Bailes on Sections of Strata at Scremerston.

		Fm.	Ft.	In.	Fm.	Ft.	In.
	<i>Brought over</i>	7	1	1	44	5	11
39	Hard blue metal . . .	3	6				
40	White freestone . . .	5	3				
41	White hard freestone . . .	2	0	9			
42	Blue metal . . .	1	0	0			
43	Bastard blue metal . . .	1	1	2			
44	Coal (<i>Caldside seam</i>) . . .			8	13	0	5
45	Dark brown metal . . .		1	4	58	0	4
46	Hard freestone . . .			11			
47	Blue metal . . .		1	9			
48	Hard white freestone . . .		3	0			
49	Blue metal . . .		1	6			
50	Hard white freestone . . .			8			
51	Blue metal . . .		5	6			
52	Coal . . .			3			
53	Soft light blue metal . . .	1	4	2			
54	Hard freestone band . . .			5			
55	Soft light blue metal . . .			7			
56	Hard brown stone . . .		2	2			
57	Hard blue metal . . .		2	3			
58	Soft blue do. . .		2	1			
59	Hard flinty girdles . . .			1	9		
60	Soft blue metal . . .			3	1		
61	Dark blue do. . .	1	3	1			
62	Soft blue do. . .		1	9			
63	Red freestone . . .	2	2	7			
64	Soft blue metal . . .			11			
65	Coal . . .			2			
66	Dark grey whin . . .			3 $\frac{1}{2}$			
67	Soft blue metal . . .		4	7			
68	Soft light blue metal . . .		5	2			
69	Hard do. . .		3	11			
70	Soft do. . .	2	2	1 $\frac{1}{2}$			
71	Limestone . . .		1	2			
72	Coal (splinty) . . .			4			
73	Soft light blue metal . . .		4	11			
74	Hard white freestone . . .		3	8			
75	Soft blue metal . . .		3	2			
76	Soft black do. . .		1	8			
77	Soft light blue do. . .		1	2			
78	Dark grey freestone . . .	1	2	1			
79	Hard blue metal . . .		2	7			
80	Dark blue do. . .	2	4	0			
81	Black do. . .		2	1			
82	Coal . . .			1			
	<i>Carried over</i>	22	4	11	58	0	4

		Fm.	Ft.	In.	Fm.	Ft.	In.
	<i>Brought over</i>	22	4	11	58	0	4
83	Black metal			$2\frac{1}{2}$			
84	Hard grey freestone	1	1	8			
85	Hard dark blue metal		4	3			
86	Soft dark blue do.		2	5			
87	Black metal		2	1			
88	Coal			6			
89	Soft light blue metal			$2\frac{1}{2}$			
90	Black metal and ironstone bands		1	10			
91	Coal			8			
92	Black dent			3			
93	Coal			$11\frac{1}{2}$			
94	Brown metal			$8\frac{1}{2}$			
95	Coal		1	1			
96	Soft dark blue metal		1	2			
97	Coal			2			
98	Soft dark blue metal			7			
99	Hard white freestone	1	0	5			
100	Soft light blue metal		1	3			
101	Hard grey freestone		3	6			
102	Hard dark blue metal		2	7			
103	Hard light do.		1	8			
104	Soft light do.			7			
105	Coal (splinty)			3			
106	Black metal		1	8			
107	Hard tills		5	8			
108	Coal			$2\frac{1}{2}$			
109	Hard dark blue metal		2	4			
110	Coal			4			
111	Dark blue metal			6			
112	Coal			5			
113	Hard tills		5	4			
114	Limestone			6			
115	Soft light blue metal		1	2			
116	Soft metal		1	0			
117	Hard freestone			5			
118	Soft blue metal			9			
119	Hard white freestone	1	4	3			
120	Hard blue metal		1	2			
121	Hard white freestone		3	3			
122	Hard blue metal		4	1			
123	Soft do.		1	1			
124	Coal			6			
125	Blue metal			4			
126	Coal			7			
127	Soft black metal			9			
	<i>Carried over</i>	36	4	$2\frac{1}{2}$	58	0	4

		Fm.	Ft.	In.	Fm.	Ft.	In.
	<i>Brought over</i>	36	4	21 $\frac{1}{2}$	58	0	4
128	Hard white freestone . . .			3 6			
129	Dark blue metal . . .			1 5			
130	Coal . . .			7			
131	Soft light blue metal . . .			1 7			
132	Hard grey freestone . . .			3 3			
133	Dark blue metal . . .			1 2			
134	Coal . . .			4			
135	Soft dark blue metal . . .			7			
136	Soft light blue metal . . .	1	0	8			
137	Hard black do. . .			1 2			
138	Light red freestone . . .			4 6			
139	Soft black metal . . .			7			
140	Dark red freestone . . .	1	0	4			
141	Hard white do. . .			7			
142	Soft black metal . . .			3 1			
143	Coal . . .			10			
144	Soft dark blue metal . . .			1 1			
145	Coal . . .			5 $\frac{1}{2}$			
146	Soft black metal . . .			1 0			
147	Dark blue do. . .			3 8			
148	Dark red freestone . . .	4	0	4			
149	Light grey whin . . .			1 0			
150	Dark brown limestone . . .			8			
151	Soft black metal . . .			1 1			
152	Hard dun blue do. . .			1 5			
153	Hard tills . . .			2 5			
154	Coal . . .			2			
155	Soft dark blue metal . . .			2 0			
156	Hard dun post . . .			10			
157	Coal . . .			3			
158	Soft black metal . . .			2			
159	Coal . . .			3			
160	Soft blue metal . . .			6			
161	Hard dun do. . .			3 6			
162	Coal . . .			8			
163	Soft black metal . . .			1			
164	Coal . . .			3			
165	Soft light blue metal . . .			4 9			
166	Slaty blue do. . .			2 3			
167	Hard freestone girdle . . .			4			
168	Coal . . .			7			
169	<i>Limestone, Roof of Main Coal</i>			1 2			
	SECTION OF MAIN COAL SEAM.						
	Top coal . . . 2 10						
	Band grey stone . . . 3						
	<i>Carried over</i>	51	4	3	58	0	4

	<i>Brought over</i>			Fm.	Ft.	In.	Fm.	Ft.	In.
Ground Coal .	1	3		51	4	3	58	0	4
	4	4			4	4	52	2	7
<i>Sunk below Main Coal Seam for Sump.</i>							110	2	11
Blue metal .					4	2			
Freestone band .						5			
Hard dark blue metal .					1	1			
Freestone .					4	7			
Coal .						8			
Soft dark blue metal .						3			
Coal .						8			
Hard light blue metal .						3			
Freestone bands .						4			
Soft light blue metal .						7	2	1	0
							112	3	11

Section of Strata sunk and bored through between the Scremerston Main Coal and the Bulman and Cowper Eye Seams, in No. 16 Pit on the Scremerston Main Coal sea level.

	Fm.	Ft.	In.	Fm.	Ft.	In.
Depth of No. 16 Pit to SCREMERSTON MAIN COAL.				32	0	0
SECTION OF MAIN COAL SEAM.						
Top coal .		2	8			
Band .		0	4			
Ground Coal .		0	11			
Feet, 3 11						
White metal .		2	6			
Hard bastard freestone .		1	3			
Strong blue metal .		2	0			
HARDY OR STONY COAL.						
Coal .		0	11			
Band .		0	2			
Coal .		1	3			
Band .		1	1			
Coal .		0	9	4	2	1 3 11
Strong blue metal .		1	0	33	3	11
Soft do. .			2			
Limestone .		1	3			
Grey tills .		3	6			
<i>Carried over</i>		5	11	33	3	11

			Fm.	Ft.	In.	Fm.	Ft.	In.
				5	11		33	3 11
	<i>Brought over</i>							
	DIAMOND COAL.							
Coal	1	0						
Band fire clay	0	8½						
Coal	0	11½		2	8	1	2	7
Soft white metal					4½	35	0	6
Coal					6			
Blue metal				1	1			
Coal					2			
Dark blue metal				2	0			
Grey freestone band					9			
Dark blue metal				3	7			
Grey freestone bands				3	5			
Strong grey tills				3	10			
Coal					1½			
Tills				2	6½			
Limestone				1	8			
Coal					2			
Soft blue metal				6	10			
Coal					5			
Black metal					5			
	BULMAN SEAM.							
Top coal	1	1½						
Chalk stone	0	0½						
Splint coal	0	9						
Band stone	0	3						
Ground coal	2	0						
Black metal	0	3						
Chalk stone	0	1						
Smithy coal	0	4		4	10	5	2	8½
Black metal					6	40	3	2½
Soft white do.				1	3			
Freestone band				1	4			
Blue metal				1	0			
Limestone				1	3			
Grey tills				3	0			
Freestone			5	0	6	6	2	10
<i>Depth to which the pit is sunk.</i>						47	0	0½
The section to Cowper Eye Seam was proved by a bore hole.								
SECTION OF BORING TO COWPER EYE SEAM.								
Freestone				4	0			
<i>Carried over</i>				4	0	47	0	0½

	Fm.	Ft.	In.	Fm.	Ft.	In.
<i>Brought over</i>		4	0	47	0	0 $\frac{1}{2}$
Coal			6			
Limestone		2	5			
Blue metal		3	3			
Freestone bands		4	3 $\frac{1}{2}$			
Metal		1	3 $\frac{1}{2}$			
Coal			9			
Freestone bands		2	3 $\frac{1}{2}$			
Black metal		5	6			
Freestone		2	0			
Blue metal		5	0			
Limestone		2	3 $\frac{1}{2}$			
Black metal		1	3			
Coal			6			
Limestone		1	2 $\frac{1}{2}$			
Metal			10			
Freestone		3	0 $\frac{1}{2}$			
Metal		1	10			
Freestone bands			10			
Coal			6			
Metal	2	1	5 $\frac{1}{2}$			
Coal			8			
Freestone bands			7			
Freestone	1	5	4 $\frac{1}{2}$			
Limestone		1	2 $\frac{1}{2}$			
Coal			4			
Freestone bands			10			
Metal		3	0 $\frac{1}{2}$			
Coal			1 $\frac{1}{2}$			
Metal		1	3 $\frac{1}{2}$			
Freestone	1	4	0			
Freestone bands		4	4 $\frac{1}{2}$			
Metal		1	3			
Hard band			3			
Strong blue metal	1	3	0 $\frac{1}{2}$			
THREE-QUARTER COAL		3	11	17	3	4
<hr/>						
Metal		1	7	64	3	4 $\frac{1}{2}$
Bastard freestone		2	4 $\frac{1}{2}$			
Tills		1	11			
Tills and band		1	9 $\frac{1}{2}$			
Coal			2			
Limestone			10			
Freestone band		1	8			
Metal			10			
Coal			5			
<i>Carried over</i>	1	5	7	64	3	4 $\frac{1}{2}$

	Fm.	Ft.	In.	Fm.	Ft.	In.
<i>Brought over</i>	1	5	7	64	3	4½
Tills			9			
Freestone band		2	0			
Crackling post			9½			
Tills			10½			
LIMESTONE ROOF OF COWPER EYE.	2	0				
SECTION OF COWPER EYE.						
Top or splint coal	1	5				
Band stones	2	1				
Ground Coal	1	4		4	10	
<i>Continuation of Section to the Wester Seam, the lowest workable coal in the district.</i>				68	2	2½
Metal		3	7			
Limestone		1	6			
Tills		2	0			
Limestone, impure		3	0			
Grey and blue metals		3	8			
Freestone band		1	6			
Blue metal	1	1	4			
Coal			3			
Grey metal		3	0			
Limestone		2	0			
Blue metal		1	0			
Freestone band		2	0			
Coal			9			
Freestone band		4	0			
Grey metal		4	0			
Metal			10			
Coal			6			
Slaty band		4	0			
Blue and grey metals		1	0			
Coal			6			
Limestone			4			
Blue, black, and grey metals		4	8			
Freestone	1	0	0			
Grey metal			8			
Limestone			6			
Metal		1	4			
Coal			3			
Freestone		2	4			
Coal			4			
Blue metal		3	1			
Limestone		1	6			
Grey metal			6			
<i>Carried over</i>	11	1	11	68	2	2½

				Fm.	Ft.	In.	Fm.	Ft.	In.
<i>Brought over</i>				11	1	11	68	2	2½
Coal	.	.	.			6			
Blue metal	.	.	.		1	6			
Coal	.	.	.			7			
Grey metal	.	.	.			8			
Coal	.	.	.			3			
Black metal	.	.	.			8			
Coal	.	.	.			6			
Black metal	.	.	.			6			
Coal	.	.	.			6	12	1	7
Blue metal	.	.	.	1	4	0	80	3	9½
Slaty stone	.	.	.			3			
Limestone	.	.	.		1	6			
Blue tills	.	.	.			10			
Coal	.	.	.			6	2	3	10
							83	1	7½

Note on the Scremerston Sections. By GEORGE TATE, F.G.S.

In the Club Proceedings of last year (Vol. V., p. 283,) I proposed to arrange the mountain limestone formation of Northumberland in two divisions; an upper group—the *Calcareous*, containing about 1700 feet of strata, and an under group—the *Carbonaceous*, containing about 900 feet. Of the *Calcareous* group the foregoing Scremerston section gives only 60 feet of the lowermost part of that group and only two of the limestone beds, from No. 3 to No. 26 the base of the Dun limestone; but of the *Carbonaceous* group, from this base downward, we have a complete section, shewing a total thickness of 917 feet of strata.

Reference may be made to the Proceedings of the Club, Vol. IV., p. 98 to 117, for a section of most of the beds of the *Calcareous* division, as seen in the neighbourhood of Beadnell.

The names used by miners in the district are given to the strata in the Scremerston sections; *freestones* are sandstones; *metals* are soft shales; *tills* are hard shales, platy or splitting into plates in the lines of stratification; *girdles* are thin hard beds of shales or sandstones. *The sump* is that part of a coal shaft sunk below the seam for the reception of the water of the mine, and from which the water is raised to the surface by the pumping engine.

Rain Fall at Glanton Pyke, Northumberland, in 1867; communicated by FREDERICK W. COLLINGWOOD, Esq.: And at Lilburn Tower, Northumberland; communicated by EDWARD J. COLLINGWOOD, Esq.

GLANTON PYKE.		Inches.
January . .	5.31	
February . .	1.06	
March . .	2.81	
April . .	2.23	
May . .	2.01	
June . .	1.56	
July . .	4.63	
August . .	1.91	
September . .	1.58	
October . .	1.37	
November . .	0.35	
December . .	3.00	

Total . 27.82

Rain Gauge—Diameter of Funnel, 8 inches; Height of Top above Ground, $7\frac{1}{2}$ inches; Above Sea Level, 534.193 feet.

LILBURN TOWER.		Inches.
January . .	4.743	
February . .	0.821	
March . .	2.318	
April . .	2.441	
May . .	1.770	
June . .	1.499	
July . .	5.167	
August . .	1.552	
September . .	1.617	
October . .	1.240	
November . .	0.266	
December . .	3.178	

Total . 26.612

Rain Gauge—Diameter of Funnel, 10 inches; Height of Top above Ground, 6 feet; Above Sea Level, 300 feet.

Rain Fall at North Sunderland, Northumberland, in the Year 1867. Communicated by the Rev. F. R. SIMPSON.

Month.	Total Depth.	Greatest Fall in 24 Hours.		Days on which 01 or more fell.
	Inches.	Depth.	Date.	
January	4.92	.70	15th	28
February	.42	.11	7th	9
March	1.97	.59	23rd	16
April	1.82	.37	27th	16
May	1.81	.48	12th	12
June	1.35	.56	3rd	11
July	4.03	.56	18th	16
August	2.25	.61	15th	14
September	1.76	.62	11th	15
October	1.29	.33	4th	13
November	.39	.20	14th	5
December	2.39	.33	7th	15
Total	24.40	5.46		170

Notice of Morchella semilibera. By Miss HUNTER, Spring Hill, Coldstream.

This rare fungus was found in May, at Spring Hill, in great abundance, near a wood, but growing on the earth in the kitchen garden, which was separated from the wood by a hedge. In its brittleness it differs from *Morchella esculenta*, a specimen of which, found in May 1866 by the Hon. James Home, remains in a tough leathery state.

(Mr. Jerdon records the *M. semilibera* from thickets by the Jed, in the Proceedings of the club, vol. V., p. 36).

THE CHEVIOTS.

Their Geographical Range—Physical Features—Mineral Characters—Relation to Stratified Rocks—Origin—Age—Botanical Peculiarities. Read at the Meeting at Dunsdale, July, 1867, by GEORGE TATE, F.G.S.

MEETING this day in one of the deep picturesque valleys among the Cheviot hills, it may be of some interest to lay before the club the result of many explorations of this mountain range, with the view of shewing what are its physical features, its mineral characters, its relation to stratified rocks, its origin and age, and its botanical peculiarities.

On the more important archæological remains among these hills, papers have been printed in our Proceedings,* yet, this subject is far from being exhausted; and a list has been given of the more remarkable plants growing upon them;† but little has appeared respecting their geology. Winch briefly notices their mineral character;‡ Professor Nichol describes the rocks forming them in Roxburghshire;§ but a more extended account appears in an able memoir by Mr. D. Milne Home on the geology of Roxburghshire, printed in 1842 and 1843 in the Transactions of the Royal Society of Scotland.||

Geographical Range and Physical Features.

The name of the principal mountain is applied to the whole range of the Cheviot hills, which form part of the Border land in Northumberland and Roxburghshire, and extend

* Vol. IV., p. 431-453 and p. 293-316.

† Vol. V., p. 179-181.

‡ Trans. Geo. Soc., IV., 1817.

§ Trans. High. and Agri. Soc. of Scotland, 1845.

|| Trans. Royal Soc. of Edin., XV., part 3, 1843.

from Branxton on the north to Ridlee hills on the south, about 22 miles; and from Branton on the east to Bloodylaws on the west, nearly 21 miles; the area in Northumberland being about 200, and in Roxburghshire about 100 square miles. These hills, rising out of the stratified rocks by which they are flanked and towering high above them, are marked by distinctive features. The lowest level at which the porphyry and syenite, of which they are formed, appear in Northumberland, is in Akeld burn 300 feet above the sea level; but from this the ground rises rapidly; Akeld hill is 986 feet high; Homildon, the scene of a Border battle, is 977 feet; Yevinger, which is crowded with archaic remains, is 1182 feet; Standrop, 1721; Newton Tors, 1762; Dunmore, 1860; Windy-gyle, near the Borders, 1983; rounded Hedgehope, 2348; and broad-backed Cheviot, the highest of all, is 2676 above the sea level. In Roxburghshire the elevations are less, and melt down more gradually to the general level of the district; yet here Hownam-law is 1472 feet high.

Many of the hills, especially near the Borders, are of a fine smooth conical form and roll as it were into each other, being separated by short upland valleys or hopes; but others are connected by high ridges. In deep narrow gorges, the burns and rivulets brawl over rocky channels and leap over cliffs, which form here and there picturesque waterfalls and linns, the highest being Harthope and Linhope spouts. Other narrow clefts, without water, appear like gashes in the sides of the mountains. One element of picturesqueness is wanting, for the tops of the hills are usually naked and treeless; but on some, as on the Tors, Standrop, and Housey Crag there are outbreaks of rock. Variety is given to the scenery by long trains of stones or *glidders* extending from the summit of the minor hills to their base, when the slope is considerable; for the rock readily breaks under the action of the elements into small fragments, which, when weathered, assume a purple hue. On a bright summer day some years ago, I enjoyed from one of the spurs of the Cheviot, a magnificent view over part of the range. During the morning the tops of the hills had been wreathed in mist; but, towards afternoon, while looking down the deep valley of the Colledge, and tracing the headlong course of the river among the rocks, a light breeze sprung up and rolled away the mist from one hill top and then from others in succession, until the sun lighted up with marvellous brilliancy the whole of the mountains: the spell of a great magician appeared thrown over

the scene. Great pillared rocks appeared, and long trains of purple stones blending their tints with the bright green herbage; crags crested the summits, or broke out of the sides of some of the hills, resembling ruined towers and castles, and the hills and valleys rolling into each other appeared to rise and fall like the billows of a great ocean.

Mineral Character.

Igneous rocks are conveniently arranged in two divisions; the felspathic or plutonic, and the augitic or volcanic. Granites and porphyries belong to the former, and basalts and trap rocks to the latter. Generally, too, the former are much older than the latter; and, notably, this is the case in the Border counties, where the basaltic whin sill and basaltic dikes belong to a much more recent era than the Cheviot porphyry and syenite.

The great mass of the Cheviots is formed of felspathic or plutonic rock, of which we may distinguish two groups—one porphyritic and the other syenitic; which, though essentially of the same composition, yet are structurally different, as the former has a compact base, while the latter is entirely crystalline.

1. Of *Porphyry* there are several varieties.

1. *Red porphyrite*, the most abundant of all, is composed of a base of felsite, through which are scattered crystals of orthoclase or common potash felspar; and this is often specked with minute crystals of hornblende. The colour readily distinguishes this variety; but as it is distributed throughout the whole range, localities need not be given.

2. *Dolerite*, which is usually of a dark grey colour and composed of labradorite or soda felspar and augite, is widely distributed, but not so abundantly as porphyrite; it occurs at Housey Crag, Langley Hope, Dunsdale, Yevering, Tom Tallon's Crag, Yetholm, Reaveley, Prendwick, Alwinton, &c. In some places, as at Coldburnlaw and Hawsen burn, it is magnetic. At Prendwick, Yevering, and a few other localities, it is traversed by veins of porphyrite specked with crystals of hornblende. Though having more of the character of the felspathic division of igneous rocks, the dolerite of the Cheviots has some alliance with the augitic division, not only in mineral composition, but, also, in some cases, in its structural form; in the Hawsen burn it appears in rude quadrangular columns, made up of short tabular prisms only a few inches long; and these, too, are slightly magnetic.

3. *Pitchstone porphyry* occurs near to Cherrytrees, in Roxburghshire, and in a great cliff near to Yetholm, where it is veined with quartz, coloured with oxide of iron. It is used as a building stone, and the church of Yetholm has been built of it. Essentially the same in composition as felsite, it has a different mineral aspect; it is of a dark grey colour, of a resinous lustre, and sub-conchoidal fracture; it contains more water than the rocks with which associated; and its peculiar vitreous state may have arisen from rapid cooling, through the sudden accession of water.

4. *Amygdaloid porphyry* occurs near to the junction of the igneous with the stratified rocks in the Riddlees burn on the east side of the range. Through a felspathic base, accompanied with green earth, are scattered round chalcedonies about the size of a pea and less, and also larger nodules of agates and jaspers; and, besides these, there are geodes or cavities partly filled with well formed crystals of quartz.

II. *Syenite*, next to porphyrite and dolerite, is the most abundant rock in the Cheviots. It is entirely crystalline and usually composed of red orthoclase, black hornblende, with a small but variable quantity of white quartz; it occurs at Housey Crag, Cheviot, Langleehope, Akeld, Yevering, Reaveley, Linhope, Standrop, Blindburn, &c. Occasionally it passes into a variety of granite by the addition of mica which is either silvery, yellow, or black. Specimens have been sent to me with yellow shining mica as gold found in the Cheviots.

These porphyritic and syenitic hills are not rich in minerals. In cavities and veins of the rock in Hawsen burn, on the north side of Cheviot, there are quartz crystals, some of which are two inches long, being six-sided prisms terminated by six-sided pyramids; usually, however, the crystals are small and simple pyramids. A few are amethystine, coloured violet by oxide of manganese; others are various shades of brown; and many more are white, or transparent; and hence, from their brilliancy, the locality has obtained the name of the Diamond burn. Similar crystals occur on Coldburnlaw and in other places. *Quartz rock* appears in Hawsen burn, and also in considerable masses at Cat Crag, near Yetholm. *Green earth*, in small nodules and specks, gives a varied colouring to all the kinds of porphyry and syenite; it has, sometimes, been mistaken for carbonate of copper. *Sulphate of barytes* occurs amid quartz rock and decomposing felspar at Tod Crag, near Yetholm. *Hematite* has been seen in a vein

near to Harthope; *peroxide of iron* is in small veins on the north side of Cheviot; and *iron pyrites* are in Homildon Dene; but, excepting the iron diffused through the hornblende and augite, the quantity of iron in the Cheviots is small.

Relation to Stratified Rocks.

Porphyries and syenites, as well as other igneous rocks, have been erupted at different periods; but as mineral character alone is no certain test of age, and as, moreover, such rocks contain no organic remains, we must seek a chronology from other sources, more especially from their relative position to other rocks whose age is ascertainable. We must, therefore, examine the stratified rocks which flank the Cheviots, before we can form an idea of the origin and age of these erupted mountains.

1. Beginning with the oldest stratified rocks, we find *Greywacke* or *Cambro-Silurian beds* highly tilted up against the porphyry in the valley of the Coquet above Philip and extending beyond the source of that river into Scotland. Eastward of Makendon they are well exposed in a high cliff; the Roman camp—Chew Green—rests upon them, and some of its rampiers are natural walls of greywacke *in situ*, with the rock removed on both sides. They consist of distinctly stratified greywacke slate, which is much jointed and sometimes divided into short irregular prisms, but which has no slaty cleavage; and with these slates are interstratified harder beds of greywacke, which are occasionally conglomerate. They are composed of felspar and quartz with a little mica and sometimes chlorite. Their dip is always high but irregular both in amount and direction; but though crushed and squeezed, highly inclined and folding over each other, the general strike of the beds is pretty regularly from north-west to south-east. Strata of the same age and character abut against the porphyry in Lambden burn near White Lee and in the bed of the Reed near to Ramshope, whence they extend up the Carter fell nearly to the Toll bar; they are covered *unconformably* by beds of the mountain limestone era. These greywacke strata are a prolongation into Northumberland of the same system which runs across Berwickshire in a west-south-west direction from Siccar point and Burnmouth, and which occupies about one-third of Roxburghshire in elongated ridges of moderate elevation. In a similar crushed and elevated condition these greywacke beds abut against the

western flanks of the Cheviots in Roxburghshire; at Bloody-laws on the Oxnam they are seen dipping northward sixty degrees, and at Rink southward about seventy-five degrees; but they are generally nearly vertical with a pretty uniform strike from west-south-west to east-north-east.

The precise correlation of these greywacke beds is not yet ascertained; but this much is certain; they are much older than the old red sandstone conglomerates which cover them *unconformably* in Berwickshire and Roxburghshire. Fossils have not been detected in them in Northumberland; but Mr. Wm. Stevenson, of Dunse, found a graptolite and tracks of an annelid in greywacke on the Dye water, but in beds apparently high up in the system. Probably these strata are about the same age as the Longmynd rocks referred by Sedgwick to the Cambrian and by Murchison to the lower Silurian system; and hence until more definite evidence is obtained, they may conveniently be designated Cambro-Silurian.

2. *Red Sandstone Conglomerates* of considerable thickness, but occupying an inconsiderable area, appear on the flanks of the Cheviots at Roddam and Biddlestone in Northumberland, at elevations from 500 to 700 feet above the sea level. In the deep, narrow dene of Roddam they are exposed upwards of a mile, consisting principally of conglomerates, *formed of rounded pebbles of Cheviot porphyry*, from the size of a pea to that of the human head, scattered through a flesh and brick red clay and sand, loosely bound together by peroxide of iron. Interstratified with these are thin beds of harder conglomerate with smaller pebbles, and thin beds of greenish chloritic, calciferous sandstones, some of which contain as much as 40 per cent of carbonate of lime. Above the loose conglomerates are soft, thin, bedded red sandstones, and below them are hard red sandstones with large ripple marks. These beds are not less than 500 feet thick, dipping generally E.S.E. 15 degrees, but, occasionally, as much as 50 degrees. Organic remains I have not found in them; but, as their mineral characters and geological position correspond with the old red conglomerates of Berwickshire and Roxburghshire, they may, without much doubt, be grouped with that formation. In Biddlestone burn they are close upon the porphyry of the Cheviots, sloping away from it to S.S.E. at an angle of 25 degrees, and are there overlaid *conformably* by Tuedian strata.

The red conglomerates of the Border counties are more

connected with the carboniferous than with the Devonian system. Their relations are best seen in the section from Siccar point to the northern extremity of Berwickshire, where they distinctly rest on the upturned edges of the greywacke or Cambro-Silurian strata; and are *conformably* overlaid by beds of the Tuedian age, the line between the two being marked by the occurrence of *Holoptychius Nobilissimus* in the red conglomerate, and of *Stigmaria ficoides* in the Tuedian beds. In this upper old red sandstone one determinable plant, *Adiantoides Hibernicus*, has been found in Berwickshire; and from similar beds in Roxburghshire, I have seen casts of pretty large stems, probably belonging to a sigillaria. Mr. D. Milne Home notices that sandstone within twenty yards of the Cheviot porphyry on Jed water contains rounded pebbles of Cheviot porphyry.*

3. Strata of the Tuedian formation, which is intercalated between the upper old red sandstone and the mountain limestone, were, by a great flood, exposed in Akeld burn, in direct contact with the syenite of the Cheviots. The section there is of considerable interest, and shows a calciferous, softish sandstone of a pale greenish hue specked with yellow, lying against the syenite, but dipping away from it N. by E. 85 degrees; and this is followed by about 100 feet more of greenish and grey shales, interstratified with thin beds of cherty limestones, which weather buff, and a few beddy micaceous sandstones. These strata are similar to the Tuedian rocks in the Tweed and Whiteadder; in the shales are remains of fish, and scales of *Rhizodus Hibberti*, reed-like stems to which is attached *Spirorbis carbonarius*, *Stigmaria ficoides*, and a species of *Sphenopteris*. The section evidences not only the upheaval of the stratified rock, but also considerable mechanical disturbance; the slope throughout is nearly perpendicular, but in one part, which is obscured, there is a fault by which the dip is reversed.

Sandstones of the same formation, in detached blocks, can be traced on Whitelaw—the hill east of Yevinger—as high up its slope as 900 feet above the sea level, while the same rock in mass mantles the hills at a level of about 500 feet.

In other parts of the range, rocks of the same formation appear. In Biddlestone burn they overlie *conformably* the old red conglomerates; but more extensive sections of them are seen in the Riddlees burn, and, on the Coquet from Linn brig to Alwinton, where about 1000 feet of characteristic sandstones,

* Geology of Roxburghshire.³

shales, and thin cherty limestones are exposed. At the point of junction at Linn brig they are highly inclined, disturbed, and shattered, and some portions are torn from the mass; they dip away from the porphyry at an angle of 75 degrees, which, however, lessens as the distance from the porphyry is increased.

To this formation I am disposed to refer a small isolated patch of sandstone, filling up part of a deep narrow dene in the porphyry, near to Cherrytrees, about one mile northward of Yetholm. It is of limited area, but upwards of 50 feet in thickness, in thin beds nearly horizontal, mostly soft, of a dull red colour, and micaceous; but other beds are less micaceous and mottled with red, somewhat gritty, being formed partly of small fragments of porphyry. Organic remains I could not find; but I have been told that casts of small branches of trees have been seen in it. Porphyry surrounds this sandstone, and there is no similar deposit within two miles. Very probably the lower porphyry hills of this district, towards the west and the north, had been covered by sandstones of the Tuedian age, which have been removed by denudation; leaving this little patch, protected by the narrow valley, to tell us some little of the history of the past.

Origin.

Some modern geologists are disposed to regard such plutonic rocks, as granites and their allies, as metamorphosed sedimentary rocks. M. Delesse, who has written with great ability on metamorphism, distinguishes two kinds: first, normal or general metamorphism, depending on causes which have acted on a grand scale, but generally in an imperceptible manner; and secondly, abnormal or special metamorphism, which depends on partial causes visible in their modes of action and generally limited in extent. Of the abnormal metamorphism there are many examples in the Border land, affording clear evidence of the igneous origin of basaltic rocks, and of their having, like lava, been in a heated and molten state; for the stratified rocks in contact with these basalts are in several places, as at Ratcheugh, Holy Island, Bamburgh, Dunstanburgh, &c., metamorphosed; limestones have been converted into crystalline marble, shale into ribboned porcellanite, coal into anthracite, and sandstone has been indurated. Such effects, however, nowhere appear on stratified rocks adjacent to the Cheviot porphyry and syenite; these strata are elevated, and in some cases contorted, but

there are no changes in structural character seen, which can be attributed to the action of a heated rock mass ; nor do the porphyries and syenites penetrate as veins into the stratified rocks with which they are in contact. It may, therefore, be inferred, that, when these porphyries and syenites were erupted through the stratified rocks, they were not in a highly heated or even in a molten state. Still, however, they contain within themselves pretty clear evidence of their igneous origin; they are all more or less crystalline, and some of them are entirely so ; and they rise as one great boss distinctly through the unmetamorphosed stratified rocks by which they are surrounded. In one sense they are metamorphic ; the result of that normal or general metamorphism by which, far down in the depths of the earth, mineral masses, whencesoever derived, were by heat, or pressure, or vapours and gases, or by the combined influence of all these several agencies, reduced to a molten state, so as to admit of the free motion of the elementary substances among themselves, and the development, after cooling, of a crystalline structure. When thus in a cool and consolidated state, these porphyries and syenites have been, by the action of internal forces, protruded through the superincumbent strata ; but the whole elevation, as we shall see, did not take place at once, but, at least, in two different periods.

After being erupted some slighter changes appear to have taken place ; as the filling up of cavities and veins by quartz crystals, chalcedonies, agates, and green earth, which was most probably due to the infiltration of water charged with silicates. The wavy ribboned structure of the agates around a nucleus resemble much stalagmitic deposits from water saturated with carbonate of lime. While, therefore, regarding these porphyries and syenites as essentially igneous, it is not necessary altogether to exclude the agency of water ; for even modern volcanic eruptions of lava are accompanied by discharges of heated water ; and possibly, therefore, the hydrated pitchstone may owe its peculiar structure to a similar accession of water when the rock was in course of consolidation.

It may be admitted that some granites and porphyries, and the gneiss into which they graduate, are metamorphosed stratified rocks ; but it would be unphilosophical to infer from this that all other such rocks had the same origin ; each case must be tested by its own evidence. Now the Cheviot porphyries and syenites bear no trace of having been at any time sedimentary rocks. No fragment of an organism appears ;

no rolled grains, such as make up sedimentary rocks, enter into their composition; nor are any planes of stratification to be seen. Jointed they are, both vertically and horizontally; and some joints when viewed in section simulate the appearance of strata; but when examined closely they prove to be oblique joints, which, as well as the other joints, had been produced by shrinkage when the rock was passing from a molten to a consolidated state.

Age.

We are now more able to determine the age of the Cheviot range. There have been at least two upheavals, the one following the other after a long lapse of ages. The first protrusion took place subsequently to the Cambro-Silurian era; for rocks of that age, which had originally been mud beds deposited in the sea in a nearly horizontal position, are highly tilted up against the porphyry, by the protrusion of which, the relative position had been altered. Within certain limits we can also determine how long after that era this first protrusion took place; for, as pebbles of Cheviot porphyry form part of the upper old red sandstone conglomerate, it is evident that the Cheviots were elevated before that era. The tumultuous waves of a shallow estuary broke over the lower portion of the Cheviot hills and detached several blocks, and rolled them, and heaped them in irregular beds, at a time when ganoid fish swam in the waters, and ferns and probably sigillariæ grew on their slopes. Of the precise time of the protrusion in the interval between these two eras we have not evidence; for our rocky records are here imperfect, there being no trace along the flanks of the Cheviots either of undoubted lower Silurian, or of the upper Silurian, or of the true Devonian systems.

A second upheaval took place subsequently to the Tuedian era, and probably not long after; for beds of that age are highly tilted up against the porphyry and syenite both in Akeld burn and on the Coquet. Prior to this elevation the range was submerged fully 900 feet below the present level, as is evidenced by the Tuedian blocks high up on the hills; but subsequently to this second protrusion, vast masses of strata must have been removed by denudation on the northern and eastern sides of the Cheviot range.

Botanical Peculiarities.

As the flora of a district is to a certain extent influenced by the character of the rocks beneath the surface, some slight notes may be added on the botany of the Cheviots.

The modern aspect of this range of hills is, however, very different from that of mediæval times, when the *great Forest of Cheviot* was tenanted by herds of red deer and roes, and was the scene of the "Woeful hunting" sung so plaintively in our Border ballads. Ruthless Border warfare destroyed this great forest; even so early as the middle of the sixteenth century much of it was gone; there were "many allers and other ramell wood;" "the grownde was overgrown with linge and some with moss"; but there was still "great plenty of red deer and roes." Though a few stunted oaks, descendants of the denizens of the old forest, still grow on the northern slope of Yevering, and patches of indigenous birch, alder, hazel, the elder, mountain ash, and a few thorns and sloes in the valleys, and one holly still lingers near the top of Brough law, yet the higher grounds are now denuded of ancient trees. Deer and roes are entirely exterminated; but their place is now occupied, more profitably, by large flocks of sheep, for the support of which the fine sweet herbage of the minor hills is especially adapted.

Taking into account the area of the Cheviots, their situation, distant from fourteen to thirty-five miles from the sea, and their altitude, the botany is far from being rich. Perhaps this comparative poverty may be due to the small amount of lime distributed through the porphyritic rock; and it would seem, indeed, that the rare plants, which grow upon them, find a habitat there more from height above the sea level than from the mineral character of the rocks. A more peculiar flora marks the basaltic rocks of the Borders. The flat extended summit of Cheviot itself is very dreary and barren, being chiefly a great moss hag, in some places near to twenty feet deep, with here and there tufts of *Carex rigida* and *Festuca vivipara*, and patches of *Rubus chamæmorus*, *Vaccinium Vitis-idaea*, and *Lycopodium alpinum* and *Selago*. At a little lower level the two rarest plants of all flourish, *Epilobium alpinum* and *Cornus suecica*, the former at an altitude of about 1900 feet; at lower levels still, on the minor hills we have *Pyrola secunda* and *Viola lutea*. But among the rocky ravines and cliffs in Dunsdale, Goldsclough, and Henhole, at elevations from 1000 to 2000 feet, most of the more interesting plants of the range have their habitats, as *Epilobium alsinifolium*, *Saxifraga stellaris* and *hypnoides*, *Asplenium viride*, *Cystopteris dentata*, *Allosorus crispus*, *Poa Balfouri*, *Sedum Rhodiola*, and *Salix nigricans*; yet none of these can be considered as peculiar to this rock formation.

As on these hills we have the conditions of cold and moisture there is an abundant growth of mosses, which, from the decay of successive generations over the same ground, gradually form peat deposits. On the summit of Cheviot this peat is soft—a moss flow; but at lower levels it is more consolidated, and on the gentler slopes and flat places has a depth from a few inches to more than four feet. About a thousand feet below the summit of Cheviot many small branches of alder and birch, the largest being about one foot in circumference, have been found, but neither fir nor oak. At lower levels, however, oak of a considerable size has been dug out of peat. The great forest of Cheviot does not appear, therefore, to have reached a higher altitude than 1600 feet above the sea level.

As sheep pastures chiefly, these hills are valuable. On Cheviot itself the grasses are generally coarse; *Eriphorum vaginatum* springs up early in February or March, when sheep are fond of it; but at a later period, in June and July, *Scirpus cæspitosus*, the deer's hair or ling, a sweet rush, comes up on the lower grounds. *Nardus stricta*, the wire or black bent, is abundant on the hills about Goldsclough. The lower hills about Ingram and along the Border and on the Beaumont are the most valuable sheep pastures, as the grasses (especially *Festuca ovina*) which they yield, are of a finer character.

MISCELLANEA.

Zoological Jottings at North Sunderland, 1867.

By Rev. F. R. SIMPSON, North Sunderland.

April 23, Swallows (*Hirundo rustica*) were first seen; and on the 30th the Redstart (*Sylvia Phœnicurus*).

April 29th, the common Brown Butterfly (*Vanessa urticæ*), first seen; and on June 10th the smaller white (*Pieris Rapæ*). Of Butterflies there have been few this year.

May 5th, the queen Wasp (*Vespa vulgaris*) was first seen abroad.

September 13th and 14th, the bulk of the Swallows departed after a storm on the 12th; and after October 14th none were seen.

October 4th and 9th, a straggling Woodcock (*Scolopax Rusticola*) was seen; on November 3rd Woodcocks were seen for the first time this season in any number together, but still very few arrived. This has been an unfavourable year for these birds.

October 9th, Redwings (*Tardus iliacus*) arrived.

November 3rd, dense flocks of Golden and Common Plovers (*Charadrius Pluvialis*) and Lapwings (*Vanellus cristatus*) were seen.

November 22nd, a large oblong Sunfish (*Orthogoriscus oblongus*, Schneider,) was left ashore last night below Monk's House; its length was 4 ft. $5\frac{1}{2}$ in., and depth 2 ft. $9\frac{1}{4}$ in.; and its weight was estimated by Mr. R. Patterson of Monk's House to be 336 pounds.

Botanical Notes. By ARCHIBALD JERDON.

This summer, *Goodyera repens*, in some abundance, was discovered by Mr. Alexander Curle, one of our members, in a fir plantation near Gattenside. In the same plantation I observed a patch of *Hypnum crista-castrensis*—a northern *Cryptogam*, as the *Goodyera* is a northern *Phænogam*.

Notice of Thalassidroma Bullockii, Selby, (Procellaria Leachii of Temminck), the Fork-tailed Stormy Petrel.
By FRED. J. W. COLLINGWOOD, of Glanton Pyke.

On Sunday, December 1st, 1867, we had a fine calm warm morning; but at 2.30 p.m. a violent storm suddenly arose from north-east by east. On the following day a fine female specimen of this rare Petrel was picked up by a labourer at the Low Pyke, which is distant from the sea twelve miles, and nine miles west of Alnwick. It was given to my game-keeper and was then alive, but so much exhausted that it died soon afterwards. It is now stuffed and placed in my museum at Glanton Pyke. In the *Field* newspaper of December 14th, there are two other notices of this Petrel being found, one at Colchester and the other at Spalding. This species was first observed and discriminated by Mr. Bullock, at St. Kilda, in 1818; and therefore in justice to the discoverer, both Fleming and Selby have adopted the specific name *Bullockii*, instead of *Leachii*, which was given to it by Temminck.

Notes, by GEORGE TATE, F.G.S.

Petromyzon marinus. A specimen of the Marine Lamprey, which was 27 inches long, was taken in June last, in the race of Lesbury Mills on the Aln. This species has been occasionally seen in the Tweed, but has not been recorded from the Aln.

Glaciation at Little Mill. What is called the *little limestone*, which is fifteen feet thick, is now extensively worked at Little Mill, three and a half miles north-east of Alnwick; and a considerable area of the upper surface has been laid bare, by the removal of the boulder clay which rests upon it, and which contains blocks of sandstone, basalt, and limestone, some of which are polished and striated. The exposed surface of the limestone is hollowed roughly, and jagged, as if the waves of a stormy sea had beaten upon it; but other parts are smoother, and these are polished and striated, the striæ being generally in the direction of north north-west to south south-east.

General Statement.

Since last year we have lost five members by death, and fourteen have ceased to be members by resignation and non-payment of subscriptions. Thirteen new members have been elected, so that at present the number is 218.

The INCOME has been:—

	£	s.	d.
Balance from last year ..	10	12	3
Arrears received	13	8	0
Subscriptions for 1866 ..	38	12	0
Do. 1867 ..	0	6	0
	<hr/>		
	62	18	3

EXPENDITURE.

For Printing, Lithography, &c.	39	17	7
	<hr/>		
Balance in hand	23	0	8

Places of Meeting for the Year 1868.

Eyemouth and Valley of the Ale, Thursday, June 4.				
Alwinton	..	..	..	June 25.
Melrose	..	..	..	July 30.
Alnwick	..	..	..	August 27.
Chirnside	..	..	..	September 24.

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Chirnside, September 24th, 1868. By JAMES HARDY, Esq., of Old Cambus.

GENTLEMEN,

YOUR President is not expected to trace the progress of Natural History or Archæology, either at home or abroad, during the season, but chiefly to recapitulate the operations of our own Society during the summer months. Observation rather than profound or extensive learning is the standard we fly over our meetings in the field; and hence alertness in looking about him, is a very necessary qualification for one who is called to preside over you. We have had enough of thought and book-lore at home, and therefore the teachings of Nature are what we pay most attention to; selecting from her stores whatever may refresh or reinvigorate the mind, in the various branches of research to which any of us may have taken a fancy. It is in this spirit that I venture to take up

the thread of the Club's history, at the point where my predecessor has put it into my hand, and I have to congratulate you all on the very satisfactory and successful assemblages we have this year had.

The Annual Meeting was held at Cornhill, on September 26th, 1867, when there were present: Dr. Francis Douglas, President; Mr. George Tate, Secretary; and Messrs. W. B. Boyd, John B. Boyd, Robert Middlemas, John Paxton, George Hilson, Robert Douglas, William Anderson, T. Y. Greet, J. E. Friar, Charles Rea, James Cunningham, William Cunningham, A. Jerdon, George Hughes, Dr. Turnbull; Reverends Robert Jones, P. MacDonall, W. C. King, S. A. Fyler, William Darnell, P. Mearns, William Lamb, J. S. Green, J. Dixon Clarke, D. McAlister, and P. McKerron.

After breakfast the accounts were audited, and the subscription for the ensuing year was fixed at six shillings.

Before commencing the walk of the day, the Rev. S. A. Fyler read a paper on Cornhill, which has been printed in the Proceedings of the Club. The party after visiting the church proceeded to Kippie hill, where there are traces of the ancient inhabitants of the country; and engaged with interest in digging into the hill, the result of which will be given. Learmouth bog and the district around were examined, and of the more remarkable plants found there, a notice is contained in the President's Address of 1867. A fine bright autumnal day was favourable for field explorations.

After dinner, the President's Address was read, and James Hardy, Esq., of Old Cambus, was elected President for the ensuing year.

The following gentlemen were elected members, viz.: Mr. J. A. Appleton, F.S.A., Durham; Mr. G. F. Tweddell, F.S.A., Stokesley; Rev. Henry Martin Carr, Alnwick; Rev. P. McKerron, Kelso; Dr. Alexander Dewar, Melrose; Mr. William Currie, Lint Hall, Selkirk; Dr. William Blair, Denholm; Mr. John Lee, Procurator Fiscal, Jedburgh; Major the Hon. Robert Baillie Hamilton, Langton; Rev. David Donaldson, Alnwick; Mr. Alexander Roy Borthwick, Melrose;

Rev. George Albert Ormsby, Eglingham; Rev. P. Mac-Morland, Minto.

The following places were fixed on for meetings, during the ensuing year:—

Eyemouth and the Valley of the Ale, June 4.

Alwinton, June 25.

Melrose, July 30.

Alnwick, August 27.

Chirnside,.. September 24.

The first meeting of the year 1868 was held at Ayton and Eyemouth, on June 4th. There were present, Mr. James Hardy, President; Mr. George Tate, Secretary; Sir Walter Elliot, Dr. Francis Douglas, Revs. H. M. Carr and John F. Bigge, Messrs. J. C. Langlands, A. Jerdon, Charles Rea, Edward Allen, W. B. Boyd, John Paxton, Thomas Allan, T. Y. Greet, John B. Boyd, J. E. Friar, and as visitors, Revs. Stephen Bell, J. E. Elliot, Messrs. Dawson, George Paulin, Wilson, Renton, Shaw, and Druett.

For inspection after breakfast, Mr. Greet had brought from Norham castle an iron arrow head, and a large straight buck-horn handle, perforated throughout, of some knife-like implement. Both receive explanation from the following account, by Sir Walter Scott, of the equipments of a warlike deer-hunter. "A belt round his waist served at once to sustain the broad-sword, and to hold five or six arrows and bird bolts, which were stuck into it on the right side, along with a large knife hilted with buck-horn, or, as it was then called a dudgeon-dagger." The old church bell of Ayton, with an inscription in ancient letters, was brought before us, but our time was too limited to make the attempt to decipher it. The stately new church at Ayton was then looked at, and the party walked hastily down the Ayton woods to the junction of the Eye and Ale at Mill-bank. Dryness prevailed wherever we penetrated, but we skirted some fine banks of oak, ash, and beech, (lovely when autumn assumes its dappled robe); and watched with pleasure in the calm pools of the Eye, happy shoals of minnows gliding gently to and fro, as they

are wont to do; or on a sudden alarm, wheeling round and darting off from apprehended danger. The route down the Eye was over Lower Silurian shales, which contain a more notable quantity of Carbonate of Lime than is generally found in the same formation elsewhere in Berwickshire. A dike of Basalt was seen in the Ale water cutting through the same strata. The red soil that we had passed over affords indications of Red Sandstone, which makes its appearance in the Ale above Millbank, whence it is supposed to extend to the Fort at Eyemouth. The Greywacke of the Ale is indeed very rufescent, but insufficiently coloured to warrant the deep hue of the red soils all along its banks, so far as we went, and which are also continuous to the coast. These seem to mark either the proximity of Red Sandstones and their accompanying marls; or their presence in former periods of the earth's history, although now swept off. Transported materials also mix with them; as for instance fragments of drift-coal, and *keel*, an earthy red hæmatite, near the brick work at Ale mill, where the clay is said to be accumulated in a natural hollow; but in general a soil owes more to the abrasion of the subjacent rock than to substances brought from a distance.

The party having separated in the Ayton woods, one division went up the Ale, while the others made for Eyemouth and the coasts adjacent. *Reseda luteola* grew about Millbank and on the Kip rock, a bold perpendicular section of Greywacke and its slate, with the strata nearly horizontal. The *Reseda* appears alien here, handed down from people who may have used it for dyeing in the olden time. About the summit of the pine-crowned cliff, a pair of the pretty *Motacilla Boarula* (Grey Wagtail) amused us by their restless solicitude about the safety of their nest, hid somewhere up in that fastness, far beyond our reach. Kip rocks are numerous in Scotland, the name being applied to jutting eminences or upright points of rocks. The Islandic *Keppr* is a tumour; *Kipper* is a beaked fish; *Kippit* horns are horns curved upwards.

The Ale water, whose tortuous glen we had now entered, is in summer an unobtrusive burn, continually being crossed

by ledges of rocks, occasioning by their resistance to its flow small rapids and tiny waterfalls, that oft relieve the far up solitudes with their prattling noise; and yet in itself, when passing to its level or collected into pools, a stream of very little descent; the current at times being almost asleep, and inclined to linger on and on among the hindering masses of Conferæ, and the mosses, that with a fresh verdureæ mantle its edges in soft cushions, or anchoring in tufts or masses in the fissures of rocks or stones, compel even barrenness itself to vegetate in spangles of manifold beauty. It is for the most part strictly confined between steep banks, which are very dry; and consist of braken-clad hollows, sections of rocky scaur, either bare, or bosky with whin, or sloe, or brier; with here and there an abrupt, nearly naked cliff, bossed, and seamed, and lichened over. Miniature Atlantas or Magdalas too there are, where you pass through a gorge, with a break-neck rock above you, and the blue sky for a canopy. To some banks ivy contributes its dusky clothing; natural elms stretch out their shadowy arms, intermixed with lighter ashes; and there are detachments of hazel-shaw interwoven with the long pendant branches of some hoary hawthorn; and at intervals scattered mountain ashes standing stiffly up. Some parts are planted; and there is a broader piece of wood towards the lower end, where the banks recede at the same time that they also rise, allowing between them room for a bottom, where the burn, so quiescent in summer, plays pranks when swollen with rains or melted snow; and being aboundary, the trees are transferred from one proprietor's side to another, as it shifts its course, and require to be marked like sheep.

Flora here has been beneficent. If we start by the mill-lead above Eyemouth mill, there are *Veronica Buxbaumii*, now becoming universally diffused, a bush or two of *Tanacetum vulgare* from some old "garden of herbs," and quite an orchard of *Rosa tomentosa* and *R. villosa*. Passing on to the Ale, *Lychnis dioica* empurples the hollow, plots of herb Mercury cluster in the excess of sociality, and the giant grasses, *Bromus hirsutus* and *Triticum caninum* wave their panicles by the

burn. *Myrrhis odorata* indicates that some cottager's hand had once laboured the spot; but often also a garden outcast, as on the banks of the Eye up towards Ayton; and in the autumn there are frosted dew-berries (*Rubus cæsius*) by the pathway, acid to the taste. Cow-parsnip in the pasture speaks for a considerable modicum of clay in the soil; the great white Ox-eye (the Greeks ought to have dedicated it to Juno) accompanies it, as well as the brilliant blue *Geranium dissectum*. Then there are the wild Basil (*Clinopodium vulgare*); wild Marjoram, plentiful; *Poterium sanguisorba* on rocks, but rare; dwelling too among the rock fissures there are *Sedum acre*, the wild Thyme, the rock Cistus, *Knautia arvensis*, *Allium vineale*, and *Thalictrum minus*. This *Thalictrum*, when grown in a pot and kept clipped, forms a cunning substitute for *Adiantum Capillus Veneris*. Here is *Fedia olitoria* also; *Stachys arvensis* among the field soil where gravelly; and the Pimpernel searches out with its scarlet eyes the red soil in which it luxuriates. The roses are *Rosa tomentosa* and *R. villosa*, and near the summit of some of the banks *R. spinosissima*. *Asperula odorata* frequents the wooded side; there are primroses and cowslips in their season; *Viola hirta* glances from some secret corner among the rocks; the Carlina thistle finds some sun-beat, scantily grassy bank, suited to its arid nature; the Spindle tree can also find sustenance among the rocky interstices; and where moisture trickles down, you unexpectedly come upon a bush of Hemp Agrimony, reminding you, like *Thalictrum*, of a sea-side influence penetrating inland far beyond the tide. *Polystichum aculeatum* and *Polypodium Dryopteris* are the more select ferns. The mosses, moreover, are of some of the rarer kinds. Having, a short time previously, visited Roddam dene, I was often reminded of similarities; both are dry, both have a red soil constituted of Red Sandstone debris, while the mosses often coincide, and testify to the presence of lime in both kinds of rock; some of the Roddam sandstones "containing as much as 40 per cent. of lime." (Tate, in "New Flora of Northumberland and Durham," p. 5.) Thus *Anomodon viticulosus*,

Encalypta streptocarpa, *Zygodon viridissimus*, *Bryum pallens*, *Mnium rostratum*, *Hypnum commutatum*, *filicinum*, and *molluscum*, not to mention others common to both. Among other spoils we also found *Anomodon curtispendus* and *Leucodon sciuroides*. *Cinclidotus fontinaloides* was abundant, and so were *Orthotrichum cupulatum*, and *C. anomalum*. Nearly all these were got on rocks by the burn; three of them are additions to the Berwickshire flora. We could have lingered here much longer, but it was our duty to rejoin the main company, who had left the "moss-croppers" to themselves. The fairies, we are told, once danced to pipe-music on the banks of the Ale, and delayed belated travellers, who stood charmed to listen; but here were we more intensely enthralled, without the thrilling appeals of magic minstrelsy. Some of the members who still remained behind were conducted to a willow tree, where they picked up *Cryphæa heteromalla*, and *Leskea polyantha*, but both so dwindled that the shy things had evidently hidden themselves, that they might not be put on record. I afterwards found the *Zygodon* in the ravine at Mill-down below Coldingham.*

This being the Club's first visit to Eyemouth, the authorities had made preparations to give us a distinguished reception. "The flag-staffs on the Fort and Pier-head were gaily dressed, and the ships in the harbour gave prominence to their flags"; and being the town fair, the people also kept holiday. The party who had gone down to Eyemouth had the benefit of Mr. Tate's company, and to him I owe the result of their investigations. "On the shore a peculiar porphyritic rock was examined with much interest; for it presents considerable variations of character; in some parts it is a normal porphyry, with a base of felsite, in which are crystals of common felspar; in other parts the structure is more complicated; for, in addition, are crystals of carbonate of lime and black plates of

* *Erythræa Centaurium* grows on the Ale; and a plot of *Doronicum Pardalianches* has long rooted itself on the banks below Linthill. Since the Club's meeting, Messrs. Shaw and Anderson have met with *Arabis hirsuta* sparingly, and also *Amblyodon dealbatus*.

mica, while here and there are scattered through the mass hardened nodules of porphyry, and other nodules enveloping green carbonate of copper. More peculiar still are fragments of a similar rock distinctly laminated, and scattered through the general matrix irregularly, so that the laminations slope in different directions, and have the appearance of broken and displaced stratified rocks. Resting on this porphyry are beds of old red sandstone and conglomerate, in some parts near to 50 feet in thickness, and forming a cliff on the north side of Eyemouth harbour."

Near to the Fort, across a deep ravine, Captain Knivett shewed to the members the rocket apparatus in action, by means of which lives are rescued from shipwrecks; and to him the thanks of the Club were passed for his courtesy and attention.

The company then visited the churchyard. Nowhere else, perhaps, is there such a collection of tomb-stones of the "raw head and bloody bone" type. The Rev. Robert Lambe, vicar of Norham, editor of an old poem on the "Battle of Flodden Field," and author of the "History of Chess, with easy instructions how to play it," Berwick, 1774, who died in 1795, aged 84 years, was buried at Eyemouth.

After dinner, the following communications were made:—Zoological and Botanical notes, from Mr. Embleton; Notes on caves near Burnmouth, and of Ancient British sepulchres at Reston and at Billie Mains, from D. Milne Home, Esq. Mr. Wilson, fishing officer of the Board of Trade, Eyemouth, gave the Club an interesting account of the mussel scalps of Lynn and Boston; a subject of much importance to those interested in the fishing trade of this port. Mr. William Dickson communicated to the Club the discovery of a vein containing Barytes and the black ore of Antimony on his estate of Whitecross. As there was not time to visit the locality on the day of meeting, Mr. Tate afterwards went to the place, and through the kindness of the tenant of the farm, the vein was exposed. "It runs in the direction of from north to south, and is about 18 inches broad, having on both sides a white quartzose rock, which protrudes through the

greywacke slates, and forms the Gallows law. The vein is the sulphate of Barytes, which is white and crystallized; the Antimony ore I did not see, but Mr. Dickson, several years ago, dug out about a cart load of it." On this the President has to remark that these minerals have long been known to exist on the Gallows law. It is more than thirty years since I received specimens of both from this place; and when visiting it a few years ago, on the adjoining property of Mr. Home, fragments were still lying strewn about.

The following were nominated for membership:—Rev. John Elphinston Elliot, rector of Whalton, and Mr. R. S. Bolam of Weetwood. Dr. Francis Douglas gave notice that he will move at the annual meeting, that Mr. William Shaw of Gunsgreen, and Mr. John Anderson of Lintlaw-burn, Edrom, be elected corresponding members of the Club.

The second meeting of the year was held at Alwinton on June 25th. The President's journal commences at Old Bewick, whence Mr. Langlands and he set out, while the birds were yet singing their matins. A shower had chilled the air, but at the same time had cleared it, and brought to view, both on the right and left, the tops of all the hills, and sharpened their outlines; whilst along the lower land, nothing that had prominence lay hid. This is the kind of weather in which the Northumbrian hills arrange themselves to the best advantage. They vary much in shape; what appears to be a narrow end in one aspect lengthens to a vast hill-side in another, and what we have found to be a tedious long ridge in crossing, shrinks up into narrow space. I will not enumerate them. It accompanied us all the way to Alwinton, that green porphyritic range on our right,—a multitude of rounded forms undulating into each other rather than jutting out, and slanting away upwards, not without hollows intersected by streams behind and between, but invisible to us, to a loftier and darker back range,—Hedgehope, Bleakhope, Hogden, and Cushet law. They are devoted wholly to pasturage, while the way we took was along the lower slopes of cultivated ground. Corn poppies, *Papaver dubium* and *P. argemone*, prevailed in sandy fields near New Bewick; and nearer Wooperton there was a splendid field of blossoming *Carduus nutans*, a

fine sight—thistles though they were. Percy's Leap was certainly a marvellous performance, to a knight on horseback, sheathed in heavy armour. The Roman road hereabouts accompanies and crosses the highway; the large stones having been judiciously allowed to remain. Very pleasing, newly washed by the rain, were the garlands of wild blush roses, suspended archwise from the hedges, near Brandon White House. This season, like most flowers, they have been evanescent as poppies. The accumulation of gravel by the water side at the County bridges has long attracted the attention of geologists; and yet this wild stream—this Breamish or mad water—further down, can only shift small particles of silt. At Eslington we crossed the Aln, there contracted and juvenile; a small curved bridge at the end of the park wall is the subject of one of Bewick's tail pieces. Here the Dog-roses again enlivened us, but the land had grown poor and clayey, and other thistles than the *nutans* spoke of neglect. The farm-houses also were become small and mean looking; some of them are roofed with ponderous slabs of sandstone slate, which are said to be porous and to admit moisture. "Baxton hughe," in 1552, watched by the "inhabiters of Over-trewycke," must have lain somewhere near our route, further on. Bakestones were girdles fashioned out of this fissile variety of rock. Eslington was formerly the property of the "courteous" Collingwoods, once a powerful race in this part of Northumberland, whose other seat of Little Ryle has now been allowed to go to decay. Darkly, in the fair morning light, the gloomy pines throw their shadows over the terraced sandstone heights of Thrunton crags and Callaly. How funereal they must look during a thunder-storm! Opposite to us, on the other side, were the Ryle and Prendwick hills. I had visited these during last summer, but they are dry and grassy, and the only unrecorded plant I met with was *Carex muricata*, at Haselton Rigg wood, above Alnham. On Casely moor the crops get still barer; the curlew and lapwing haunt the road; the hawthorn ceases to thrive; and the tree tops on the south-western side bear witness to the frequent onsets of cutting winds. Netherton is a curious old village of one story houses and thatched cottages; the inn signs have never

been renewed since the day they were first set up ; so that—

“Half effaced by rain and shine,
The Red Horse prances on the sign.”

Greyhound coursing in the autumn is said to give it notoriety. The eye could now cross over to “dark Simonside’s” commanding bulk, surmounted like Ras-castle, &c., with its peculiar diadem of sandstone cliff. This sandstone series often breaks off abruptly all at once, as in the bleak height above Holystone; and its lower moors, as at Harbottle, are strewn about in disorder with fantastic shaped rocks and crags, as if they had been a battle field of the giants. This angularity of outline, and the dark brown heath that invests them, form a distinctive feature between them and the neatly modelled green hills of the Cheviots, over against which they ever stand with a dark menacing frown. In the broad interval of arable country between the hills, in former ages, a strong colony of laborious Saxons had formed a settlement, of which there is still on evidence, the names attached to the manors and farm-steadings, some of them not quite capable of explanation, but looking like the coinage of one and the same mint. For example there are Borrowdon, Elylaw, Screnwood, Netherton, Trew hitt (Trewyck), Yetlington, Lorbottle, Sharperton, Farnham, Wreigh hill, Caistron (Kesterene), Bickerton, Flotterton, Thropton, Wharton, Snitter, Cartington, Harbottle, Biddleston, Harehaugh, Swindon, Rimp side, Ryehill, &c. It was the descendants of these men that flocked to Paulinus at Holystone, to obtain from him the initiatory rite of Christianity.

On our right “peeping out from a Druidical grove of huge oaks,” in a recess among the green hills, and half-way up their sides, is Biddleston hall, the “Osbaldistone Hall,” of the author of “Rob Roy;” but it is no longer “an antiquated edifice.” We now reached the actual scene of the Club’s visit; the Coquet, so often sung in the “Fisher’s Garlands,” glitters in crystal radiance; further up, on the verge of the moors, we discern the light gracefulness and fair tresses of the native birch; while beneath us, on a sheltered flat by the waterside, very much in a cluster, lies the small village of Alwinton:

“A region of repose it seems,
A place of slumber and of dreams
Remote among the hills.”

Here the Alwine is wedded to the Coquet; it is enough to refer to the nuptials.*

At this meeting were present—Mr. James Hardy, President; Mr. George Tate, Secretary; Dr. Bruce, Messrs. Robert Douglas, F. W. Collingwood, Robert Middlemas, Edward Allen, J. C. Langlands, Revs. A. Procter, J. S. Green, Robert Henniker; and as visitors, Rev. Dr. Cathcart, Rev. Mr. Meggison, Messrs. William Richardson, H. Hunter, H. H. Blair, &c.

The members were hospitably entertained to breakfast at the vicarage. They then viewed the renovated church, a worthy memorial of the present amiable vicar, the Rev. Aislabie Procter. It contains monuments of the Clennells, and of the Selbys of Biddleston. In the Churchyard the turf is so little broken that it still carries the wild flowers of the district: *Geranium dissectum* was then in blossom. *Scolopendrium vulgare*, in the rockery, was said to be from Holystone dean. The ancient church was resorted to as a sanctuary. In the time of Gilbert de Umfreville, 1293, &c., who exercised almost regal jurisdiction, “Thomas de Holm being taken within his franchise escaped out of the prison at Harbottle and fled to the church at Alwinton, but Simon Smart and Benedict Gley, porter of Harbottle, beheaded him at Simon Seth and hung his head up on the gallows at Harbottle.” The same unscrupulous chieftain is accused of compounding felony, at the instance of the vicar of Alwinton, whose nephew Ralph being taken within the liberty and imprisoned, his uncle the vicar gave twelve marks to the Lord, and thus the criminal escaped.†

After breakfast, the members divided into parties: one visited Harbottle Castle, the Drake stone, the ruins of Holystone nunnery and Paulinus’ well, Lanternside or Campville, Sharperton and the Peels. They brought back specimens of the juniper and *Habenaria chlorantha*. The other party

* Marriage of the Coquet and the Alwine. Edited by John Adamson, Newcastle, 1817.

† Hodgson, Hist. Northumberland.

strolled up the Coquet towards the hills. *Chenopodium Bonus Henricus* and mugwort grew near the village, having been used formerly for pot herbs or for medicine. Some of the old houses and a ruinous mill were well worth being transferred to the sketch-book. Some fine limestone scars were exposed on the river, overhung by a natural wood of elm, birch, hazel, &c. The rock on which we walked in the channel formed a natural pavement, being cracked into squares, that reminded us of a Roman causeway. The sand beds of the Coquet, says Hodgson, "have been celebrated for their beautiful pebble-crystals, pale cornelians, chrysolites, (?) and agates." Geodes of crystals are most frequent in situations such as this; where the stratified rocks come into juxtaposition with the porphyry,—and our path was not far off the line of junction. The botanical party were unsuccessful in eliminating anything new; and, although good plants have been found here, none of them fell to our lot. The drought had been beforehand with us, rendering the herbage stunted and insignificant. Among other things almost cancelled were the mosses. *Bryum pallens* and *Cinclidotus* were picked up; and among the pastures we saw Marjoram, the Shepherd's Pansy, and the Maiden Pink; and *Circœa* in a small ravine. The sandstone side, although heathery, looked more promising, where a greater freshness accompanied the small burns and sykes; and where, on the moor edges, the delicious verdure of the fine scattered birches cast gleams of loveliness that were lost upon none of us. Redlees burn pours in its mossy waters at Linnshiels. Little esteemed among anglers is—

"The byke frae Redlees syke;
Wi' warish moss-water black and lean."

Linnshiels and all the parish of Alwinton south of the Coquet belonged to the liberties of Redesdale, the demesne of the once potent Umfrevilles. In the name, we trace the summer settlements of the old Borderers. "All over the wastes (as they call them), you would think," says Camden, "you see the ancient Nomades; a martial sort of people, that from April to August, lie in little hutts (which they call *sheals* and

shealings) here and there, among their several flocks.”* The survey of 1542 describes the Redesdale men as living in *sheels* during the summer months and pasturing their cattle in the grains and hopes of the country, on the south side of the Coquet about Wilkwood and Redlees. We had expected a waterfall at the Linn above Linnbrig, but it is only a rapid, occasioned by the river rushing through a deft; but the pool is there—the true *linn*, in the original acceptation of the word—dark and bottomless. We examined here the interesting junction of the porphyry with the lowest formation—the Tuedian—of the carboniferous system, whose beds are tilted up. This was also seen in the Redlees burn. An amphitheatre of flatter ground opened up to us as we got on the hillside above the Linn, and traced the Coquet up by Shillmoor away towards the Border side; and yet not so depressed but that broad hill still rose over hill, and interweaving with one another, till on the horizon they formed a rim whereon the shadows of the clouds reposed. The western side was bleaker and wilder, and speckled with heath. On the east stood Cushet Law, the monarch of Kidland. It was somewhere up on those far-off wilds that, some three hundred years ago, the indwellers of Alwinton kept watch and ward, by day as well as by night, to prevent the country from being harried by the audacious Scottish reivers. October 6, 1551. “The Day-Watch of Ryddys-dail.” “The inhabitants of Allenton, and the Parkheyd, to watch at Paspetheheyde, with two men in the watch; and Persevall Harbottell, and John Wylkynson, to be setters and searchers of that Watch.” “So the Day watch of Ryddysdaill ends at Paspethe; where it joyns with Cookedaill.” “The Day-watch of Cookdaill.” “Allenton to watch to Paspethe with two men every day; setters and searchers of this watch John Wylkinson, the Laird of Donesgrene, John Wylkinson, otherwise called *Gordes John*.” “Item, the passages from Allenton to Clenell, to be kept with four men [nightly] of the inhabitors of Allenton, the Parkheyd, Newton, Foxton and New hall.”† Unarmed parties

* Camden's *Britannia*, by Gibson, p. 1079.

† Nicholson's *Border Laws*, pp. 179, 181, 183.

like ours, in those times, would have been in hazard of being kidnapped and held out to ransom; for the country people were not trustworthy; they intercommuned with Scottish thieves; and were "notable bog-trotters," amongst whom "the king's writs runneth not;" and no man "would even travel here that could help it." To a later and less lawless period belongs that cultivation of the green tract before us, which has drawn those crooked ridges that mark the hill-sides far and near; radiating from some of them as from a dome. They are oxen-ploughed ridges; the team, it is said, requiring those windings, not being so readily turned at the ends of the furrows as horses, from the greater space they occupied. Three oblong buildings, built without lime, on the banks of the Coquet, attracted our notice; and another came in our way as we passed to the Hawsden burn ravine, through a slack behind the high porphyritic hills. Corresponding to them, are the remains of buildings in the lower part of the Langleyford vale, which the old people say had been used as bughts for sheep-milking. They are rather small for bughts, as bughts are now, and are in close proximity to numerous hut circles of British origin, that lie hid at the base of the *glitters* there, and ancient mounds connected with them. Moreover, structures very much alike, may be seen in a camp, on the south bank of Wooler water, above Langlee, and among British huts and forts in more than one hollow of Homilheugh, and also among huts on the hills above Akeld, and elsewhere. They occur likewise in hill forts on Northfield, near St. Abb's Head; and one at the east end of Earnsheugh has been set down as a small Roman camp. Those situated near camps are oblong-oval, whilst what appear to be more modern erections are rectangular. They may have been sheep-bughts, or cow-houses, or stables; and in this instance why may they not have been the byres for the oxen that ploughed these crooked ridges? The situation was well adapted for the peculiarly Augean management of their manure by the careless farmers up here. "Many of them have ingeniously contrived to build their houses near a 'burnside,' for the convenience of

having it taken away by every flood.”* The land is now given up to sheep. The herbage is rather coarse, containing a proportion of bent, *Nardus stricta*, which Cheviot sheep reject. There are fewer clumps of brakens on these hills than one sees on the porphyritic hills about Wooler. We went across a piece of boggy ground. The plants noted were *Sedum villosum*, *Myosotis repens*, the water cress, Brooklime, and *Avena pratensis* in the pastures. A single-ringed British camp of small dimensions lay on our left; an ancient farm-steading I might call it. Hawsden burn runs in a confined winding ravine, that cuts its way sheer through the hills, which rise steep and bare on either side. By the burn there are a few mosses; *Polytrichum alpinum*, *Bryum cernuum*, and *Cinclidotus* were noticed. These, and Fox-glove, and the Shepherd’s Pansy; *Aspidium Oreopteris* and *Asplenium Adiantum-nigrum* were all the plants we saw. Whether Hawise who gave name to the dean was a man or a woman some old deed alone can testify; there was such a name of either sex.† The party now became still further divided, some went down to Harbottle Castle, and others turned up the Alwine to look at Clennell, and its patriarchal sycamores and ashes. Clennell was a peel-tower in the olden time, it is now modernised into a mansion-house; and as we sat opposite it, more than one of us thought it one of the most delightful nooks in the world for one to turn into in one’s old days.

“And I said, if peace may be found in the world,
That best of all blessings, I’ll meet with it here.”

In this mood, we quite forgot to look for the trap-dike, which Mr. Tate says is visible here, “approaching near to the porphyry of the Cheviot, *but never entering it.*”‡

After dinner, Notes were read of a botanical visit to the Cheviots; and from Mr. Embleton, Notes, zoological and botanical. Mr. Tate read a paper on Harbottle castle, and

* Bailey and Culley’s View of Agric. of Northumberland, pp. 113 114.

† In 6 Edward III., *Hawise*, widow of Sir John de Clavering of Warkworth, held in dower the manor of Rothbury and the “Hamlets of Sniker, Berlin, Thropton, end Newton.” Collins’ Peerage, Suppl. II., p. 651.

‡ New Flora of Northumberland and Durham, p. 32.

afterwards gave an account of an ancient British interment discovered near Alnwick ; and then described the geology of the district, noticing the discovery of remains of fish during the day's ramble. Some observations were made by members on the food of the salmon. It was mentioned that in the stomach of a salmon caught in Mr. George Young's fishery above the mouth of the Whitadder, a portion of a herring had been taken out. In an address delivered at Berwick, subsequent to our meeting, Mr. Milne Home stated that "only lately a salmon was caught at Twizel, a place which it would probably be three days in reaching from the sea, and on being opened, five herrings were found in its stomach." On the same topic, some years ago, Mr. George Young had told to the Tweed Commissioners' meeting at Cornhill, that a salmon had been caught in the Tweed with a kitten in its inside. Mr. Home also said that only "last week a salmon was caught which was found to have swallowed the toe-plate of a man's shoe." We were previously aware from the Club's Proceedings, that salmon devoured herrings ; but the value of additional confirmatory facts is not thereby diminished.

We were told by Mr. Proctor, that during the rebuilding of the chapel at Holystone, a grave formed like that of an ancient Briton, of slabs, had been dug up. The ground may have been used for burial previous to the arrival of Paulinus ; and even its sacred fount "the Lady's well" may be a relic of paganism, for the Saxons were strongly addicted to well-worship.*

The Duke of Northumberland was proposed as a member by Mr. Tate, which was seconded by the President, and by a special vote his Grace was unanimously elected a member. Mr. Wilson, of Holy Island, was nominated for membership.

This visit to the Coquet might have been more productive

* The connection of Paulinus with Holystone appears to be traditional only. In "Mackenzie's History of Northumberland," Bede is cited as the authority for 3,000 persons being baptized there ; but, on looking into Bede, (*Ecclesiast. Hist. B. ii. c. 14.*), there is no mention whatever of this circumstance. There is this reference to it in Camden's *Britannia*, col. 1093. "Hard by stands Holystone, or Holystone, where in the infancy of the English church, Paulinus *is said* to have baptized many thousands."

had some of us known the ground ; but we had a cordial company, and those who did not obtain the novelties they looked for, indemnified themselves by "feeding," as it has been quaintly expressed "on prospects and fresh air;" indeed, there was a general disposition to enjoy ourselves in this way.

On the subsequent day, the President along with Mr. Tate and various other members were present at the meeting of the Northumberland and Durham Archæological and Architectural Society, at Old Bewick, when the Rev. William Greenwell, the President, delivered an address on the ancient inhabitants of Britain, as they are made known to us, from the study of their sepulchral remains. Previous to the arrival of the company, I explored the margin of Harehope burn, near to the Corbie Crag, on Bewick Moor, and noted down the following plants, most of them, however, already recorded by Mr. Langlands: *Anagallis tenella*, *Lycopodium selaginoides*, *Trollius Europæus*, *Equisetum sylvaticum*, *Corydalis claviculata*, *Ilex Aquifolium*, *Listera cordata*; and of mosses, *Dicranum squarrosum*, *D. palustre*, *Physcomitrium Eriectorum*, *Bryum pseudo-triqetrum*, *B. caespititium*, and *Tetraphis pellucida* (in hollows below sandstone rocks).

The third meeting was held at Melrose on July 30th, when there were present, Mr. James Hardy, President; Mr. George Tate, Secretary; Sir Walter Elliot, Sir George S. Douglas, Bart., Messrs Alexander Curle, J. C. Langlands, J. E. Friar, C. P. Bosanquet, A. Jerdon, W. B. Boyd, A. Matthewson, Revs. J. P. MacMorland, J. S. Green, M. H. Graham, P. G. MacDouall, George Thompson, Drs. Robert Hood, C. Douglas, James Falla, Alexander Dewar; and as visitors, Dr. J. G. Smith, Capt. McPherson, Messrs B. Bosanquet, C. B. Black, Mr. McGill, and Mr. Rooper.

We find that at Melrose, as Sterne has it, "all the world in yellow, blue, and green runs at the ring of pleasure;" most of the people we meet are dressed; gay carriages whisk past; the railway pours out a crowd of new arrivals; and holiday parties march by to the sound of band-music; workmen are but sparingly visible except about new buildings, or engaged in the quarries, or far up on the parched hill-sides commencing

to harvest the scanty crop. Provided with omnibuses we left the town and its "grey abbey," and passed through Newstead, noted for its numerous dials, as well as for its Roman memories, on to Ravenswood. The day was cooler than most days about this period, otherwise it would have been intolerable. We noticed a hedge entirely composed of the Barbery, and mildewed as is usual with that shrub. Ravenswood is a modern mansion, with a Scriptural inscription over the principal entrance: "THE LORD SHALL PRESERVE THY GOING OUT AND COMING IN." There is a goodly display here of *Pinus*, *Abies*, and their allies; all of them thriving. We took the pathway winding along the wooded banks of the Tweed. On either side grew the numerous woodland plants frequenting such situations—the wild Strawberry, Woodruff, *Oxalis*, *Rumex viridis*, *Bromus hirsutus* and *giganteus*, *Geranium dissectum*, Marjoram, Sanicle, *Myrrhis odorata* in one spot, Avens, *Circæa*, *Veronica arvensis*, and such like. The *Anomodon viticulosus* grew profusely on the rocks, which were a reddish-tinted Greywacke and Greywacke slate. Beds of the Mercury were curiously flattened by the drought; had it been moist weather we would have said they were lodged by rain. The path conducted us to the peninsula, where once the abbey of Old Melrose stood—a calm retreat, flat and grassy, and bordered with full-grown trees, where its apex runs out, causing the Tweed to make a circular bend round it;* and elevated behind in a tree-covered bank. On the opposite side of the Tweed, steeply ascending banks enclose this secluded haugh all round, clothed with hanging wood, tree towering over tree; at the one end, where Gledswood peers out at the top, elm is the principal constituent; in the middle, scrubby oak with long twisted arms, and a sprinkling of mountain ashes, scarcely hide the nakedness of the soil of the Gait or Goatheugh, where you can see the rabbits stealing through the opens; while at the further end, the banks spring sheer upwards, and the oaken coppice thickens into a dense, leafy screen, with only here and there, low down, a grey cliff

* "Quod Tuidi fluminis circumflexu maxima ex parte clauditur." Bede.

coming out to the light. These three divisions are also of as many divers colours. The bank below Gledswood is of a slaty grey, like the channel of the Tweed; on crossing the Halidean burn it is yellow; and, nearer to Bemerside, red. The first is owing to fragments of slaty shale; the second may arise from this shale weathered, for we find a similar ochreous colour elsewhere in such a soil, where rabbits have burrowed in it, as well as when turned up by the plough, (a barren soil it is); and the third of red sandstone origin. The members here turned aside to the house of Old Melrose where refreshments were provided for them by the kindness of Mrs. Russell, to whom the thanks of the Club were duly tendered. Here Lord Henry Schomberg Kerr and Admiral Hope Johnstone joined the party. The members had the opportunity of examining two crania that had been recently disinterred in the garden, once a portion of the old churchyard. They were of different types, the one, brachycephalic, (supposed to be confined to men of the bronze period), the other dolichocephalic, (like the present race); whatever theorists make of it. The same commixture of skulls, Mr. Tate remarked, took place in the old Cemetery at Alnmouth. Old Melrose was a Culdee foundation, and hence Melrose bears an Irish-Gaelic name. (*Maol*, bare, naked, denuded of trees, and *Ross*, a projection). St. Cuthbert was the most celebrated alumnus of this house. Brought up a shepherd on the banks of the Leader, he rose to the Priorate, and was afterwards transferred to Lindisfarne. Of the humble structure of the Monks of Iona, there is not a vestige left; the chapel commemorative of St. Cuthbert on the Chapel Know being of later erection. Of this building, a huge ash tree with its magnificent arms overshadows the site. A few sculptured stones were glanced at; one with dog-tooth ornamentation; another with the figure of a fish and an angelic head; and a third, not so old, may have been a door pillar. There is still here the Virgin's Well; the Holy Wheel in the Tweed, where the Monks bathed; and the Monks' ford. A ditch and wall defended the peninsula from sudden inroads. The coeval monastery of St. Ebba on St. Abb's Head, equally exposed as this to the ruthless ferocity of the Danes, was in like manner protected by a rampart and ditch.

Mr. Curle, to whom the Club was so much indebted for the arrangements that conducted the proceedings of the day to a happy issue, had a couple of ferrymen awaiting to waft us over the Tweed. On the gravel of the Tweed Mr. Jerdon found *Medicago maculata*; the Viper's Bugloss was also picked up. In ascending the wood on the further bank *Melica uniflora* was observed, and a quantity of *Doronicum Pardalianches*, which is better adapted to ornament a wood, than, from its spreading habit, a garden border. Gaining the high ground above the trees, we obtained through an opening a triangular glimpse of Roxburghshire, almost unrivalled for rich cultured beauty. The foreground is rather crowded with trees however, and I prefer the view from the summit of the Eildons from its greater distinctness, and the wide range commanded all round. Here we beheld dark Ruberslaw, rivalling the Eildons in height; the lighter green hills of Minto; the round-topped Dunion also; the Cheviots with their furrowed sides, curtaining the east and west; and far remote, the blue Carter Fell, and the weird-like hills of Liddlesdale; and all the interval between divided and sub-divided with hedges and hedge-row trees, and woods in all their leafiness, with crops of different shades in each compartment; the whole resembling a vast coverlet of fantastic net-work. We did not expect to find a new mansion house at Bemersyde, the ancient seat of the family of Haig, but so it is,—an old border keep of three hundred years or more, is now flanked by extensive modern wings; like a veteran placed in the midst of a youthful posterity, and compelled to don their gayer weeds. A gruff old statue with a cross on his bosom, who once stood sentinel on the old tower, is now rather out of place where he now guards the parterre. On the lawn an old chestnut, "with seats beneath the shade," was reckoned to be at least twenty feet in circumference in the bole. In the garden were two vast holly bushes, clipped into cones, having at least a circuit of thirty yards. These are right pleasant to see, and do not belong to that class of Dutch follies ridiculed by Pope in the "Guardian." "Adam and Eve in Yew," &c. "Noah's Ark in Holly standing on the mount; the ribs a little damaged for want of water." The garden fence consisted of high

Hollies (most of them cut over), a kind of enclosure once fashionable. "Is there under heaven," says Evelyn, "a more glorious and refreshing object than an impregnable hedge of one hundred and sixty foot in length, seven foot high, and five in diameter, which I can shew in my poor gardens at any time of the year, glitt'ring with its arm'd and vernish'd leaves? the taller standards at orderly distances blushing with their natural coral: It mocks at the rudest assaults of the weather, beasts, or hedge-breakers,

"Et illum nemo impune lacescit."*

My "Uncle Toby's" hedge was of holly and hornbeam. So here we have beech at the one end. Being admitted, we find the interior of the old tower to correspond with its architecture, affording us an idea of the accommodations of the middle classes during past ages. We gain the battlements by a dark turnpike stair of very unequal steps, but find the view excluded by the tall trees that shelter the garden. The bedrooms are low roofed and gloomy, from the smallness of the windows. The walls are at least six feet thick. The Library is well furnished with books; we noticed some old copies of the classics, several Italian works, &c.; and an old Bible with illustrative wood-cuts drew the attention of some members, while others examined the swords, skull-cap, and plate armour, clad in which some "Petrus de Haga" of other days, may have quelled the Southron. Even the excommunications of the monks of Melrose, more terrible than knightly weapon, were braved by the doughty De Haigs, when the ownership of a tract of land became the subject of controversy.† Lord Jerviswoode is the present occupant of Bemersyde. Further on the party obtained one of the finest views of Melrose vale that is to be had, its rich profusion of trees, its golden corn fields, its venerable abbey, its houses and villas half embowered in foliage, its grand background of hills, and its barer hill-sides intersected by a net-work of hedges. Some of the party, to obtain a more extensive view, ascended Bemersyde Hill. These returned by the Gaitheugh

* Evelyn's *Sylva*, p. 128, 2nd Edit., 1670.

† Jeffrey's *Hist. of Roxburghshire*, IV., p. 89.

where *Galium boreale* and *Geranium sanguineum* were gathered. The others passed on to Haliden. In the mill-pond there grew *Nymphæa alba* (planted no doubt), *Alisma plantago*, *Hippuris vulgaris*, *Menyanthes trifoliata*, *Myosotis cæspitosa*, and such like aquatics. *Silauus pratensis* was seen on the dryer ground.

Campanula latifolia and *Erysimum Alliaria* were noticed as we descended "Gledswood banks" to the Tweed. A short seat here among the grass and ground ivy, brought up *Acarus autumnalis*, the harvest bug, as the theme of conversation. It is equally prevalent about Melrose as on the sea coast. It is otherwise named the "Berry bug," from its occurrence in gardens when the gooseberries ripen. It is no bug, but an extremely minute mite, that burrows under the skin, causing those small pimples that create so much uneasiness. In his articles on the *Aearides* of Berwickshire, in the Club's Transactions, Dr. Johnston has given a description and figure of the mite. For my part, I have not examined it. Dr. Johnston, however, failed to perceive that having only six legs, it was an incomplete animal—a larva;—eight limbs being the complement of a full-grown mite; and the problem is, which is the mother mite that disperses abroad such a progeny of invisible disturbers of the quietude of mankind, when disposed to enjoy the solace of country retirement. My present opinion is, that it may be traced to the species that I described as *Rhyncholophus haustor*, in the "Ann. and Mag. Nat. Hist." (ser. ii., vol vi., p. 117), which, however, may be identical with the *Acarus graminum* of Schrank, "Gmelin, Syst. Nat." viii., p. 2932; and for the reason, that it prevails to such an extent on the grassy ledges at the sides of stone-walls in fields. Now, this is also the metropolis of the harvest mite, and whenever we walk along these grassy rims in Autumn, we never fail to get our ancles quite blistered over with them; or, if we chance to take shelter from a shower behind a fence, the mites penetrate all parts of our clothing. Sometimes, in hot weather, I have laid my coat upon the grass by the sea-side, and found, on going home, that I had incurred a

disagreeable penalty not to be got rid of for many days.* It is, then, in the grass that the enemy chiefly lurks; there may be, however, mites of a similar character on bushes, unable to distinguish animal from vegetable food; but, in all probability, the vexation is occasioned by one species only.

Mr. Jerdon and I examined the gravel at Leader foot, to ascertain if any *Medicagos* grew there. We found *Barbarea vulgaris* and *Lepidium Smithii*, but no *Medicagos*. The absence is significant; for no wool is washed in the Leader at Earlston mill. The three *Medicks* (*M. denticulata*, *M. maculata*, and *M. minima*) obtained in the gravel of the Tweed before, and at, and after the meeting, point to the burring-machines of Galashiels, as having extracted their prickly seeds from foreign wool, and then left them to float down the stream, where they took root among the gravel, of which seldom so much has been laid bare for many years by-past. Shepherds allege that sheep disperse the seeds of furze over moors, by carrying them in their fleeces till they drop into the clayey soil, which the whin prefers. The wools embarked from Scutari are full of the seeds of plants, one of them being actually a *Medicago*; and I am told that in Dumfriesshire, the wool-sorters sow the seeds extracted from the Cape and Argentine wools, and raise under glass rarities unknown to rural gardeners. Mr. Jerdon was the first to detect *M. denticulata* near his residence; he then traced it to the Tweed, whence the gravel had been brought to the walks.

Leader-foot bridge was built in 1780. One of the arches is 106 feet span, and was then reckoned the largest in Britain except two, one in Wales, the other at Beckley near Tanfield; the last being the largest stone-arch in Europe.†

* In Brazil travellers are exposed to still worse annoyances from invisible foes. "There is a tiny creature called the Mocuim, scarcely visible except for its bright vermilion colour, which swarms all over the grass and low growth here. It penetrates under the skin, so that one would suppose a red rash had broken out over the body, and causes excessive itching, ending sometimes in troublesome sores. On returning from a walk it is necessary to bathe in alcohol and water, in order to allay the heat and irritation produced by these little wretches. Mosquitoes are annoying, pioms are vexatious, but for concentrated misery commend me to the Mocuim."—*On the Banks of the Amazon*.—"Agassiz Brazil," 1868.

† Newcastle Journal, Aug. 19 and 26, 1780.

We now returned to Melrose, very well satisfied with the results of our explorations; and with our minds impressed with a certain grandeur that surrounds the classic scenes, which we either traversed or had contemplated. For this is not only a beautiful land, it is also a region of renown. Here religion early planted her seat, and grew up into great ecclesiastical establishments that flourished, culminated, and fell, and were replaced by others still vigorous and apparently destined to last. Fierce battles have been waged on its fair plains; the harvests have been ravaged; and town, and cot, and sacred edifice given up, one time after another, to be consumed by the flames of war; and here those grim men who strove with each other in the madness of hot blood, lie entombed together side by side,—alas! how impotent now. Patriots too, and kings and princes, some of Scotland's best, and chieftains who in history's rolls have almost overshadowed kings,—the great Douglas race—the hero of Otterburn—how peacefully they rest! their tombs undistinguishable among those of the forgotten generations of lesser men. Comparatively little noticed till the present age, to one man above all, Melrose owes its celebrity. SCOTT touched it with his magic wand and it became famous to all time. It is his acknowledged monument; for, though Dryburgh holds his ashes, it is to the valley of Melrose that the “pilgrims of his genius” repair to catch the living spirit of his works. Scarcely less universal in his own domain of scientific truth, Melrose is also the mausoleum of BREWSTER, in whose writings, as in those of Humboldt, science walks forth never but in her majesty; and on a higher platform than the German sage ever attained, divested of all sceptical doubts or misgivings, and devoted to the best interests of humanity. For my own part, I never walk over the scenes where the great events of past history have been transacted, or which may wear the impressions of the works and lives of men of ability and worth, without a feeling of deep reverence. Such spots have special attributes, and acquire almost a moral dignity; so that amongst them it is no metaphor to say—

“Where'er we tread is holy ground.”

At this meeting the following were nominated for membership—Mr. Henry Hunter, Alnwick; Mr. James Brunton, Broomlands, Kelso; Mr. Charles Bertram Black, Melrose; Dr. John Gordon Smith, Melrose; Rev. J. W. Carlisle, St. Ninian's, Wooler; Captain James McPherson, Melrose.

The interesting objects in and around the old Border town of Alnwick—its great castle—its churches—the remains of Alnwick Abbey, of Holn Priory, of St. Leonard's hospital, of St. Mary's chantry and of the entrance gateway—attracted a large number of members to the meeting held there on August the 29th; especially as the Duke of Northumberland had liberally granted to the Club the privilege of seeing through the castle and its museums, and of wandering through his gardens and parks. About ninety members and friends were present at this meeting.

After breakfast at the Star Inn, the party proceeded to the castle, where they were courteously received by Major Holland, the Castellan, who conducted them through various parts of the castle. The exterior was first examined—the gateway of the old Norman keep and portions of the old Norman wall enclosing the two baileys erected about 1150—the impressive barbican—the mural towers—the curious draw-well in the court yard—and the two octagonal towers attached to the Norman gateway erected by the first and second Lord Percys of Alnwick from 1310 to 1350, and then the great Prudhoe tower and chapel erected by Algernon Duke of Northumberland.

Passing into the interior, the party were shewn the Egyptian museum containing a valuable series of Egyptian antiquities collected by Algernon Duke of Northumberland; consisting of statuettes, household deities, signet rings, and other personal ornaments. Among the curiosities was a small bottle with a Chinese inscription, which was said to have been found in an Egyptian tomb; and which seems to prove that the commerce of Egypt and China somewhere met at a very early period. The company then went through the suite of apartments occupied by the Duke and Duchess during the period in which the extensive alterations and repairs were made to the castle.

They saw the private sitting-rooms of the present Duke and Duchess, which are part of the alterations, and not usually shewn to visitors. The last mentioned room is of a very recherche character, containing pictures by Raffaele, Giotto, and Correggio. In the chimney-piece are some most beautiful Florentine mosaics. They next saw a room now used as a breakfast-room, which still exhibits the style in which the castle was repaired by Hugh, first Duke of Northumberland, and which is merely retained for that purpose. They then entered the dining-room, an apartment of right noble proportions; the ceiling elaborately carved with the ducal armorial bearings, surrounded by the arms of the attendant baronies—eight in number. The carvings are left in the natural colour of the wood, and display great skill in arrangement, and wonderful accuracy in detail. The pictures are principally family portraits. The saloon has a beautifully carved and gilded ceiling in the style of the sixteenth century. A beautiful marble mantel-piece surrounded by figures, the work of Signor Hucci, is in this room. The walls are covered with gold-coloured damask. The pictures are by Sebastian del Piombo, Giorgione, Titian, Guercino, and Caravaggio. The drawing-room was next entered; the walls are covered with crimson and gold damask; the ceiling is divided into compartments, richly carved and gilded. The principal picture in the room is by Bellini the master of Titian. The other pictures are by Raffaele, Perugino, Andrea del Sarto, Reni, Claude Lorraine, and Domenichino. The ante-room has a carved and gilded ceiling, not so elaborate as the last, but of an equally chaste and beautiful style. The library came next, and is said to contain 15,000 volumes nearly. It is a room of great length, height, and breadth. The books are arranged in open shelving, ornamented with an inlaid floral pattern, from the designs of Signor Montiroli. The party left by the guard-chamber, which contains pictures by a German artist called Gotzenberg, representing the various incidents of “Chevy Chase;” and descended the great staircase, and left by the octagonal towers. The kitchens excited wonder, from their extent and their varied cooking appliances.

Much interest was taken in the collection of British antiquities kept in the Postern tower, containing sepulchral urns, stone and bronze weapons and implements, and various ornaments belonging to the ancient British period; Roman altars, mural tablets, and a Saxon cross. The party were indebted to Major Holland, Dr. Bruce, and Mr. Tate for explanations of the various objects examined.

The gardens were then visited. These were all altered by Duke Algernon, and are now laid out in the Italian style; the style of Ribbon bordering being principally adopted. There was an abundant show of scarlet geraniums, calceolarias, lobelias, zinnias, &c.

The party then wended their way up the side of the Aln, through the beautiful Dairy grounds to Alnwick Abbey, which was founded by Eustace Fitz John in 1147; but the original building has been entirely destroyed, and there now remains only a fine gateway tower, which had been erected in the fifteenth century. A walk of about a mile along the river side through the sylvan shades of the park brought the party to Holn Priory, which was placed in 1240 on this site, because, so says a legend, the adjoining hill resembled Mount Carmel. It was founded for the Carmelite friars, and endowed by William and John de Vesey. The ruins are of some extent, and Mr. Tate pointed out the particular parts, the use of which could be identified—the entrance tower—the guest-hall and chapel—the kitchen—the dormitories—the chapter-house—the cloisters—the sacristy—and the great church, remarkable for its length, and for a slab on the floor incised with a Tau cross. The party ascended to the summit of a tower, erected by Henry the fourth Earl of Northumberland, in 1488, as a place of refuge for the brethren when hard pressed by Scottish marauders; and they enjoyed a picturesque view of the narrow valley of the Aln, and of the rugged hill of Brislaw; for it is here that the river cuts through the central hill-land of Northumberland. On the walls of this Priory several interesting plants are naturalized, some of them having been introduced at first, it may be, by the old friars; viz.:—*Euphorbia Esula*, *Valeriana rubra*, *Arabis hirsuta*,

Pyrethrum Parthenium, *Verbascum nigrum*, *Linaria Cymbalaria*, and *Cheiranthus Cheiri*.

After leaving the Priory and crossing the river, the party went up the steep ascent of Brislaw, on which is an ornamental tower commanding an extensive view of the country. On returning, the cist or grave of an Ancient Britain, in which was found a fine urn of a bowl shape, was examined. Hereabouts in summer flourish extensive beds of the wood Forget-me-not, like streaks of blue mist in a Highland corrie. On their way to town the company passed the Deer Park where a fine sight was witnessed, as the whole herd numbering many hundreds, rushed like a whirlwind through a gate leading from an enclosure into the park just in front of the party. A little outside of the park wall in Rotten row, was seen the spot where William the Lion was taken prisoner in 1174, while besieging Alnwick Castle.*

Fifty-five assembled at dinner at the Star Inn; and after the customary toasts had been given, and the health of the Duke of Northumberland drunk, thanks were passed to his Grace for his liberality in granting to the Club the privilege of seeing the Castle and grounds, under most favourable circumstances. Sir Walter Elliot then rendered an account of his mission, as representative of the Club, at the recent meeting of the British Association; and he afterwards gave an interesting exposition of the opening of ancient East-Indian burial-places, illustrated by plans, drawings, and several of the objects which had been found.

The Rev. J. W. Dunn read a paper on some of the manners and customs of the ancient burgagers of Warkworth. Mr. Tate brought before the meeting Dr. John Stuart's recent volume

* The places visited during the day are fully described, and their history given in the "History of Alnwick," by Mr. Geo. Tate, one of our Secretaries. We seldom gain from the old historians a distinct representation of the personal appearance of these old Scottish princes; but William the Lion stands distinctly out as the "Red King;" (rufus rex) (Chronicle of the Scots, MCLXV. Chronicles of the Picts and Scots, by W. F. Skene, p. 131, 1867), and that characteristic descended to his son Alexander II., who was taunted by John of England, as being like a *little red fox*. (Mat. Paris, p. 232.) William of Newburgh says of William that he bore a striking likeness to his mother, the daughter of the Earl of Warren, equally in countenance and disposition. Book I., chap. 23.

on the Sculptured Stones of Scotland—one of the most remarkable and magnificent works on Scottish Archæology; he explained the peculiarity of the so-called Scottish symbols found incised on rude standing stones, some of which are associated with interments of the bronze age; and others are in relief combined with crosses having interlaced and scroll work such as belongs to the sixth and seventh centuries of the Christian era. Dr. Stuart ascribes them to the Pictish people of Alba, who used them mainly on their tombs as marks of personal distinction; such as family descent, tribal rank, or official dignity. The volume too contains learned and able disquisitions on stone circles, and standing stones; several of which are on the Border land.

The following nominations for membership were made:—Major Francis Holland, Alnwick; Mr. John Atkinson Wilson, Alnwick; Mr. James Heatley, Alnwick; Rev. Matthew Happle, Warkworth; Mr. Charles James Fenwick, West Bolton, Alnwick; Mr. C. H. Cadogan, Brinkburn Priory.

Let me now call your attention to what has been done of late to illustrate the Natural History or Archæology of the district, independently of our society; and also notice the labours of some of our members in other fields than our own. For want of such an annual summary, the existence of papers in which we are interested may escape many of us. The Tyneside Naturalists have recently issued a “New Flora of Northumberland and Durham, by J. G. Baker, F.L.S., and G. R. Tate, M.D.,” to which I have to direct special attention, both as being in itself an excellent work, and as furnishing us with a manual of the Botany of that part of Northumberland which our Club claims as its work-field, viz., as far as the Coquet. Mr. Baker has given some valuable notices of the distribution of species throughout the area comprising the flora; and some picturesque and apparently faithful delineations of the physical features of the two counties. Our own Secretary, Mr. Tate, has added a geological sketch, and a map of the rock formations of the district, of great interest to us all. The work ought to rank with our own Proceedings, and with Dr. Johnston’s Flora. Our indefatigable Secretary

has also quite recently written a treatise “on the Geology of the district traversed by the Roman Wall,” as an appendix to the third edition of Dr. Bruce’s classical work; and we have in his “History of Alnwick,” now approaching completion, one of the best local histories extant;—many local histories are either tedious and overloaded, or loose compilations; but this is a work marked by that genuine ability and tact with which all of us know Mr. Tate is endowed.

Part of the Ordnance Geological Survey of Berwickshire, by Mr. Geikie, is now before the public, and contains a geological map of the eastern part of the county.

Our colleague, Mr. Carr of Hedgely, has recently turned his knowledge of the Anglo-Saxon to the elucidation of the sculptured stones of Scotland; in which he considers an influence from the Scoto-Saxon race may be traced. The title will best explain the character of his tractate. “The Symbolism of the Sculptured stones of Eastern Scotland,—an ecclesiastical system of Monograms and Decorative Characters.” Mr. Carr has also contributed to the Scottish Society of Antiquaries (vol. VII., 1866-67) an article of similar import “on the inscription upon the stone at Newton Insch, Aberdeenshire, and on an inscription on a sculptured stone at St. Vigean, Forfarshire.” Recently, Dr. Baird of the British Museum, has written several articles on Crustacea, Entozoa, Annelides, and Mollusca. Two of these notice some animals found on our coasts. The first may be considered as supplementary to Dr. Johnston’s “Catalogue of British Worms,” printed by the British Museum authorities, in 1856; viz:—“Contributions towards a Monograph of the Species of Annelides belonging to the Aphroditacea.” “*Linnean Society’s Journal*,” vol. VIII., p. 173, &c. The second is a “Monograph of the species of Worms belonging to the sub-class Gephyrea,” in the “*Proceedings of the Zoological Society of London*,” Feb. 13, 1868, p. 76. This relates to the genera *Sipunculus*, *Echiurus*, and their allies, ranked by Professor E. Forbes near the Star-fishes. The subjects of Dr. Baird’s other papers are transmarine.

I have another statement to make, and this regards the

foundation of this Club, and the circumstances that led to it. From possessing a copy of the "Transactions of the Plinian Society for 1828-9," I was led to surmise that that society might have greatly influenced the formation of ours. There we find Dr. Johnston submitting his newly found rarities to it; and the three Messrs. Baird active either as office-holders or contributors. What so natural, when all those parties became associated in close vicinity, as to have the Plinian Society transferred from Edinburgh to the country? This is my opinion of the origin of the Club, and I find, on applying to Dr. Baird, that my theory is corroborated. "My brother John, late minister of Yetholm," he says, "was the founder of the Plinian Society, though Andrew had more to do with it latterly than he had; and it was to the exertions of Dr. Johnston, my two above-mentioned brothers, myself, Mr. Embleton, and Dr. R. Dundas Thomson, with the Plinian Society as our guide, that the Berwickshire Club originated." Our Club may thus be regarded as the branch of a society established so far back as 1823.*

A society so long in existence as ours needs no vindication in the eyes of our fellow-naturalists and antiquaries; nor is any display of the advantages derivable from it required to allure enlistments into its ranks. The eagerness with which our Proceedings are sought after, evinces how much they are valued; we never solicit any one to join us, and yet our membership is annually on the increase. Thus surrounded with all the elements of prosperity, work alone is what is imperatively demanded of us; that the gaps once occupied by the founders of the Club, who are fast passing away from amongst us, may be in some measure filled up, and the Club fall not one whit behind any one of the years that have gone before. Discoveries still lie about us; many a mountain nook, untrodden wood, wild ravine, and lone shore, we have not yet pried into; and there are branches that we have never yet ventured upon; and others but imperfectly and languidly prosecuted. To make discoveries we must quite divest

* An Account of the Plinian Society is given in Dr. Baird's *Life of the Rev. John Baird*, p. 63, &c.; and Dr. Balfour's *Memoir of Dr. John Coldstream*, p. 7.

ourselves of the idea that the explorations of those who have preceded us have been exhaustive. They seldom are. It is not every season that is favourable for observation; attention is sometimes distracted; when the frame becomes exhausted we cannot always be on the look out; and if the place has only once been visited, the land-marks require to be noted before there can be a thorough investigation; hence before a spot can be said to be ransacked, it must be repeatedly tried.

I cannot do better than conclude in the words of Sir William Jardine, himself one of our veteran members, as to what may be anticipated from the institutions of which ours is the exemplar and fountain-head.

“These Clubs are of much importance. The preservation of the condition of the present physical characters of our country will be far more dependent on them than at first appears. The last fifty years have made a great change in the surface of the country; population has increased; so have agricultural improvements, plantations, drainage, enclosure of waste lands, in short artificial works of every kind. These have often completely altered the nature and aspect of the country, and in consequence the productions, both animal and vegetable. In parts of the north of Scotland, another cause, that great rage and passion for ‘sporting’ as it is termed, has influenced the distribution of the higher orders; the wild animals and birds have been reduced in numbers as ‘vermin,’ sometimes almost extirpated, and many will in a few years stand side by side in history with the bear and the wolf. It will be to these Clubs that we shall be indebted for a record of what in their days did exist; and in the still untouched mountains and valleys we may have the discovery of insects and plants not known to our geographic range; and when the country shall have been mapped on the large scale of the Government surveyors, there is nothing that should prevent an active Club to fill up in a few years a list of the productions within their beat, and so lead into a complete and accurate Fauna and Flora of our own time and age; and generations succeeding would be able not only to mark the changes of the productions, but to judge and reason upon the

effects which these now so-called improvements have produced on the climate and soil, and the fertility and increase of the latter. These Clubs have yet to write the Natural History of Great Britain." (*Memoirs of Strickland*, p. ccliii.)

NOTE.—I have recently examined three packages of seeds, picked from wool at Cumledge Mill, Berwickshire; in the first, (European), there are ten different sorts, one a *Medicago*, another *Camelina sativa*; in the second, (also European), twenty-two different kinds, a few of them of English plants; in the third. (East Indian), twelve sorts.

J. H.

Miscellanea Zoologica et Botanica. By R. EMBLETON.

THE present season is one remarkable so far, for the high and equal temperature, and the absence of those sudden changes so characteristic of our climate. From various accounts reported from many different localities it appears to have a marked effect upon the appearance of many species; and so far as my own observations have extended they agree in many particulars: thus, in regard to the swallows, they are in this locality not one third of the number observed last year, although earlier in appearance. At Embleton, the chimney-swallows returned to their nest on the 18th of April, which is the earliest date of upwards of thirty years observation. The wheatear and other visitants are by no means so plentiful; and thrushes and blackbirds are seldom to be seen, and only one nest of the thrush has been reported to me; and very few of the smaller birds have built in the shrubberies or gardens as they usually do. The very few specimens that have again this year been observed of the common Nettle Butterfly is somewhat remarkable, if one considers the number that were seen in years previous to the two last; but the White, so destructive to our gardens, is much more numerous than last year. The season has been so far most favourable for the florist and the botanist. The spring flowers in the garden never received the slightest check; and I never knew them flower more beautifully, or continue so long; whilst our wild flowers have appeared weeks earlier than is their usual. On the 24th of March, I received from Mr. Gregson of Lowlinn, abundance of flowers of *Viola odorata* collected by him on a sheltered bank near his house, a new locality in this district; and on the 30th of April, a branch of *May*, fully expanded, was collected between Beadnell and Chathill; it is seldom that it has deserved its name so justly as this year;

and on the 30th of May, Mr. Chrisp of Buston, sent me *Rosa spinosissima* in full flower. June 1, 1868.

Narcissus pseudo-narcissus. For specimens of this addition to our district, I am indebted to my friend Mr. Chrisp. It grows in some damp, shady spots, near the Coquet, above Warkworth; it is undoubtedly wild and the true plant.

The Hoopoo. A male bird of this rare visitant, in perfect plumage, was shot on Coquet Island, in the end of April last. Its appearance at this season is not, I believe, common. Its crop was full of insects.

The Arctic Gull. A male bird of this rare species, in the most perfect plumage, was shot at Newton-by-the-Sea, in December last.

The Great Northern Diver. A full-matured specimen of this noble bird was taken in a herring-net near Alnwick, and was brought alive to Alnwick. It is now in the possession of J. C. Dennis, Esq., after having passed through the hands of my friend Mr. T. H. Gibb of Alnwick, the celebrated Taxidermist, to whom I am indebted for these ornithological notices. The same gentleman also tells me that *the Osprey* has been observed on the banks of the Aln, more than once lately. It seems to be a favourite resort, as it has been shot more than once before.

Alcyonella stagnorum. In the history of British Zoophytes is a description of this rare species, from specimens I obtained at Howick. In that locality it has not been observed for many years; and it was, therefore, with no small degree of pleasure, that specimens were brought to me, from a stagnant pool in a limestone quarry, a few hundred yards from my own door, about a week ago. It was observed by Mr. John Hindmarsh, gardener to Mrs. Taylor, who told me he had observed what appeared to him like a sponge growing there. It struck me at once it might be the species, and on his return with specimens, I was glad to find my hopes realized. It may, possibly, exist in the many pools in this neighbourhood, but this must be determined by other hands than mine; as my information must now be dependent upon the kindness of the members of the Club.

Chærocampa Porcellus. Small Pink Elephant Hawk Moth. A specimen of this rare and beautiful moth was captured in this village on the 7th of this month; it is the first specimen I have ever seen here.

The Salmon : Its Food. On the 5th of June a specimen of the Sea-trout, weighing $5\frac{1}{2}$ lbs., was when opened found to

contain in its stomach three herrings; two had evidently been swallowed some time, whilst the other was quite fresh; is there any notice of such a thing being observed before?

The Cormorant. It is well known to every visitor to the Farne Islands that the Cormorants have built for many years, on one particular rock, and in spite of the gun and the robbing of their eggs and young they still retained possession of their favourite abode. Two years ago, however, a party landed, and amused themselves by piling several nests one above the other; that night the birds, without an exception, left the rock, and have never returned to it, but have taken possession of one of the islands known by the name of the Wambses. Part of them tried to establish themselves on the Goldstone; but they were obliged to leave. For the above curious and interesting notice I am indebted to the Rev. Charles Thorpe of Ellingham.

Draba verna var. *majuscula*. For specimens of this well-marked variety I am indebted to John Chrisp, Esq., who gathered it in Roddam Dene, and was at once struck by its appearance.

Carduus nutans. This thistle is now coming into flower in a field before my house; it is seldom seen in this district. June 24th.

Squalus Vulpes. The *Thresher*. Fox Shark. A very fine specimen was captured by one of the North Sunderland fishing cobles in the month of September last. A full description of another specimen taken in Berwick Bay is given by Dr. Johnson, in our Transactions for 1847.

Mustelis lævis. Smooth Hound. A very fine specimen of this Shark was taken off Beadnell in the end of November last. It is the only specimen I have ever seen, and may be considered as one of our rarer fishes.

Pagellus Owenii. Spanish Bream. This is a rare fish on our coasts; and this is the first time I have known it to have been noticed within the limits of our Club. It was taken off Beadnell on the 1st of December. I regret very much, that I was not able to preserve it.

Procellaria pelagica. Stormy Petrel. Two specimens were shot here on the 3rd of November last; several more were seen.

Rosa micrantha. For this very interesting addition, not only to the flora of our Club but also to the flora of Northumberland and Durham, we are indebted to my friend Mr. John Chrisp of High Buston, who found it near Bilton, which is its most northern limit as yet known.

Notes about the Greater Spotted Woodpecker—Picus (Dryobates) major. By CHARLES STUART, M.D., Edinburgh.

PREVIOUS to the meeting of the Berwickshire Naturalists' Club at Chirnside, Dr. Maclagan, of Berwick, wrote to me an interesting letter relative to the *Picus major*. When resident in Canada, he was familiar with the habits of this bird, and well acquainted with the peculiar tapping noise it makes when searching for insects. He was therefore not a little astonished when walking near Berwick to hear the familiar sound, and presently a fine Woodpecker commenced operations, on a rail, close to where he was standing; and he watched and satisfied himself as to its identity. On regaining the road, he was overtaken by Mr. Smith, residing at Letham, who informed him that he had a rare bird in his pocket, upon producing which, strange to say, here was another specimen of the *Picus major*, shot at Monnynut in the Lammermoors. Upon visiting the bird stuffer in Berwick, he was shown three other specimens received for preservation; one was shot at Horncliffe, another near Eyemouth. He has stuffed no less than eleven specimens of this rare bird this season, sent to him from a wide range of country. A few years ago Lord William Kennedy shot at a Greater Spotted Woodpecker in Edington Hill wood, about a mile from Chirnside; and Mr. Stewart, at one time residing at Blanerne, shot another most beautiful specimen on Leaderside, in this county. Mr. Tate informs me that the *Picus major* has been observed this season at Newton-by-the-Sea, Monks' House, Dunstan, Glanton, and Chevington, in Northumberland. I also observed that in the North of Scotland it had been more frequently shot at than in former years. The very warm summer which we have had is supposed to have attracted a flock of these beautiful birds to this country, as their distribution on the Continent of Europe is very wide, and in some parts exactly opposite our own country, extending from Norway, Sweden, Denmark, and Russia, to Italy. This bird is considered rare in England and still rarer in Scotland and Ireland. The male is very handsome. In their habits they are more arboreal than most of the other Woodpeckers, as they seldom descend to the ground, but confine their operations in search of Larvæ and Coleopterous insects, which hide under the decayed bark of trees, rails, &c. The noise they make in dislodging large masses of bark by repeated blows may be heard half a mile off, and they get plentiful supplies of spiders, ants, and other insects in the

moss-grown pollards and old posts which they frequent. They also are not free from the charge of plundering the fruit garden, and commit great mischief among cherries, plums, and wall-fruit generally. In their habits they are very shy, and dodge about, when in a tree, to keep a limb if possible between themselves and the observer. Pennant, in his *British Zoology*, states that this species puts the point of the bill into the crack or limb of a large tree and makes quick tremulous motion with its head, thereby occasioning a sound, as if the tree was splitting, which alarms the insects and induces them to quit their recesses. This, the Editor says, it repeats during the spring, in the same spot, every minute or two for half an hour, and will then fly to another tree, generally fixing itself near the top for the same purpose. I am not informed as to the *Picus major* remaining in this country in winter; but the specimen shot in Edington Hill wood was certainly killed in the shooting season, and if my memory is right, about the month of November or December.

Corrections of "Additions to the Muscology of the Border," published in the Transactions of the Club for 1865. By ARCHIBALD JERDON.

Sphagnum compactum. I am informed by a friend that my plant is not that species, but merely a compact growing variety of the common *S. cymbifolium*.

Bryum crudum. I find that my specimens belong to *B. Wahlenbergii*, and not to this species. I have found the true *B. crudum* however growing sparingly on rocks on the western Eildon Hill, and also on rocks in the Bizzle, so that we have both species on the Border. The foliage of *B. Wahlenbergii* is very pale and glaucous, but has always a dull appearance, whereas that of *B. crudum* has a yellowish tint and a glittering appearance, and the two species can generally be distinguished by these marks, even without fruit.

Bryum uliginosum. This should have been named *B. pseudotriquetrum*. As far as I am aware *B. uliginosum* has not been found in the district.

Additions to the Fungi of the Border. By ARCHIBALD JERDON.

Agaricus (Tricholoma) humilis, Fr. On the lawn at Highfield, Melrose, October 1868.

Agaricus (Collybria) plexipes, Fr. In woods near Melrose, October 1868,—new to Britain.

Agaricus (Pholiota) marginatus, Batock. On a stump and on the ground. Wood near Melrose, October 1868.

Agaricus (Hebeloma) geophyllus, Sow. *Var. lateritius*. This variety occurred in considerable abundance, in woods near Melrose, this autumn, growing in similar situations with the common form, and often in company with it. It is a much stouter plant however, and is invariably tinged with red at some stage of its growth.

Agaricus (Flammula) belomorphus, Secr. Under Fir trees. Woods near Melrose, November 1868. New to Britain.

Agaricus (Naucaria) Cucumis, P. On the ground in woods near Melrose, October, 1868. A pretty species when fresh, but losing its bright colour when dry.

Agaricus (Hypholoma) capnoides, Fr. This species appears to be common on Fir stumps, almost everywhere. It may be distinguished from *A. fascicularis*, which it much resembles, by the want of the yellow tint which pervades the flesh and gills of that species.

Agaricus (Psathyrella) gracilis, Fr. In woods among grass. Not uncommon.

Hygrophorus cerasinus, B. In woods near Melrose, under Fir trees, October, 1868. A curious species, first discovered by the Rev. M. J. Berkeley, with an odour of Laurel leaves.

Lacterius mitissimus, Fr. Under Fir trees in a wood near Melrose. A pretty species.

Tympanis Fraxini, Schwein. On dead stems of Ash.

Ascobolus carneus, P. On cow dung,—a minute species.

Phacidium abietinum, Fr. On leaves of Scotch Fir. Wood near Jedburgh. New to Britain.

Valsa dissepta, Fr. On dead stems of Elm.

Sphæria stipata, Currey. Remarkable for the dark colour of the contents of the perithecia.

Notices of the Ancient Vill of Warkworth. By the Rev. J. W. Dunn, M.A., Vicar of Warkworth.

“OLD TIMES ARE CHANGED,—OLD MANNERS GONE.”

SINCE the date of my last paper some years have elapsed ;—years which have not been uneventful, even when they are regarded with simple reference to our own neighbourhood.

Within the period of those years, among other things, the jurisdiction of Courts Baron, long in permitted abeyance, has been for all practical purposes done away.

As a patient gatherer up of the reminiscences of the olden time, I propose then, first of all, to place on record a few scattered memorials, all but forgotten, of our baronial court of Warkworth. For indeed its incidentals—by which I mean the things which it has from time to time evolved out of itself, few in number and of little value perchance, but yet too good to throw utterly away,—unless picked up now, will be for ever lost amidst the rapid whirl of human affairs.

I am well aware that our society is a very grave one, and a very learned one, and that its pleasure lieth chiefly among stones and bones, and animals of strange type, and queer plants with odd names, and mosses, and such like, which few of us will ever have a chance of finding. Nay, verily, it seems an insult to its motto—“*Mare et tellus, cū quod tegit omnia, cælum,*”—and moreover somewhat of an intrusion, to bring you down from such high converse to a level so homely and so low as the gossiping records of a remote village. And yet—for it is a poor heart that never relaxes, and a sorry mouth that never smiles—come away for once again, and we will dream that our lazy lengths are stretched along upon some sunny bank, such as I know well,—at our feet, but far below, brown Coquet, her lovely solitudes, made cheerful by the leaping play of many a trout ;—come away, I say, and despite of stones and bones, *et quod tegit omnia, cælum*, come away and rest awhile, and listen, half awake, and I will supplement my former tale.

The constitution of the Courts Baron of these northern districts has been so ably discussed by late writers, and especially by our Secretary in his interesting History of the Barony of Alnwick, that any account of the origin or authority of the Court of Warkworth, is from me uncalled for. I shall therefore confine myself to a few local incidents to which it has given rise, trifling, as I have said, in themselves, but yet, I trust, not all unworthy of preservation.

The officials of the Court Leet of Warkworth—for, although their occupation is gone, their shadow still remains, and may it never be less,—vary in no respect from those appointed elsewhere in the neighbourhood, saving and except that our Borough Grieve is distinguished by the title of the Mayor of Warkworth.

In such a quaint old place as this village of ours, it may easily be imagined that amusing representatives of this ancient office occasionally turn up. And this is the less remarkable when it is remembered that the Mayor is elected yearly, usually by house rotation, without any reference as to fitness for so dignified a position. For instance at the period of the Scotch invasion the Mayor was a thatcher. It was deemed necessary to billet troops at Warkworth, and in consequence a Government official of some importance sought an interview with this functionary for the purpose of making the requisite arrangements. He found him half-way up a ladder busily engaged in thatching a cottage. It was observed by the stranger that the Mayor received, and after a seemingly careful perusal, returned the important document of which he was the bearer—our thatcher not being overburdened you must know with scholastic lore—the wrong side up. The official ventured to remind his worship of the circumstance, but,—all honour to the Mayors of Warkworth,—the representative of our village greatness was not so easily taken aback, as by so slight a cause to allow the dignity of his office to suffer detriment, “Div ye not ken,” he nobly, and without one pause of hesitation exclaimed—“Div ye not ken that the Mayor of Warkworth can read any side up?”

I have been told that upon a similar occasion a Mayor of Pevensey, of days long past, is reported to have made a coincident reply. But, either the Mayor of Pevensey must have stolen the joke, or else the minds of Mayors must be so constituted as to run in concurrent grooves, for my story is a well authenticated fact.

The Steward of the Court, under the authority of which the Mayor and his official brethren are appointed, is always a barrister of some weight and standing. Of the duties which devolve upon our Steward, perhaps one of the most genial is that of presiding at the dinner which follows upon the opening of the year of office. A long time ago, a distinguished personage, who in after time became a Judge, was holding his dinner, surrounded by a large body of the Burgagers of Warkworth. The Mayor of the year was, very wisely, more given

to the cultivation of the soil than to an ambitious craving for earthly honours. Like Malvolio his honours had been "thrust upon him." As was customary, it became his duty at the dinner to propose a toast. This was a thing he did not distinctly understand, and it was some time before he comprehended that it was expected of him that he must get upon his legs and express an earnest wish for the prosperity of something that he valued. "Well then," he said, rather nervously rising, after some shy delay, "Well then, I give you the scribes,"—a toast which was drunk with all applause. Our Judge, not conversant with the village language, returned thanks in many eloquent words for the honour done to his *profession*. Alas! after many days, he learnt that the *scribes* were strips of freehold ground, on which the villagers planted their potatoes.

At the period of which I am speaking, it was the custom, and had long been so, for the Steward of the Court, at a dance given at the house of the Mayor, after this dinner,—and after a procession of the freeholders, a huge bonfire at the cross, and an illumination of the village, all of which still flourish as fresh as ever,—to claim the privilege of saluting the wife of the Mayor, and, indeed, any of the damsels present whom he chose to select. On one occasion, the belle of the evening, a very handsome girl, not approving of this tempting familiarity, gave our Judge a hearty box on the ear. He contented himself with good humouredly calling her a *striking* beauty, and seeking consolation amongst others less scrupulous. This freedom of our borough ceased some years ago, under the following circumstances. The Mayor for the year was a retired officer. The Judge of the Court insisted upon his immemorial rights, and, with the consent of the Mayor, pursued the coy and unwilling Mayoress from side to side, and from corner to corner,—reminding her continually of a certain ancient custom which must be observed,—until at last he succeeded by an effort in obtaining the required salute. The lady was so indignant that the Judges from that time forward deemed it prudent to waive their rights of osculation.

Years ago, an eccentric landlord of one of the village hostels had occasion to bring a beer-bibbing burgager before the Court of Warkworth for recovery of a score for numberless quarts of John Barleycorn consumed. In order to prove his claim, the landlord was directed by the Steward of the Court to put in his account. Our friend disappeared for a time, and eventually returned, bearing upon his broad shoulders

the cellar door, upon which he had marked by scratches in chalk, long and short, the amount of liquor for which defendant was his debtor. Plaintiff was called Johnnie Does,—a name which does not disharmonise with his Samsonic arithmetic.

The freeholders meet to discuss the affairs of the borough in a cottage, which was left to the town by a Mr. Lawson of Gloster Hill, for a school-house, in the year 1736, but which on these occasions is dignified by the name of the “Town Hall.” Here, very amusing scenes occasionally occur, and words are sometimes uttered whose truth is less regarded than their bitterness. However, we are not worse now-a-days, but it is hoped rather better than we were in the year of grace 1729, as the following extract from the Town’s books will testify:—

“Also agreed on this 29th day of October anno Dni 1729 by the Burrowgrieve constables and majority of freeholders of Warkworth that whosoever sweareth or curseth when at the Town business, at the Cross or elsewhere, or abuseth his neighbour by base or scurrilous talk shall either be imprisoned in the stocks the space of half-an-hour, or else pay to the Burrowgrieve 6d. per oath, to be immediately levied by the Constables and put into the Town’s box. Likewise, its further enacted and consented to that whosoever of the freeholders or innemates shall assail or abuse either Burrowgrieve or constable when discharging their duty, the offender shall either be punished in the stocks half-an-hour, or else amerced 4d. each abuse, to be given to the Burrowgrieve for the town’s use.”

As in most other places, the freeholders with much ceremony are accustomed to ride their boundaries yearly on the 12th of May. On this important day—when their possessions were worth remembering—the Mayor was wont to come to grief. For, at three different points, where large stones were set up, he was ignominiously bumped by his less distinguished brethren, in order to jog his memory. This ceremony was called “dunting the Mayor.” A dinner succeeded, at which all disagreeable remembrances were speedily and with due diligence washed away.

I may notice further, in connection with this borough, that, in old days, the herd who drove the village cattle to the moor and had charge of them during the day, claimed the privilege of selling ale at his cottage for the space of a fortnight each year. The freeholders were all expected to present themselves. Much drinking went on, and, sometimes, the house was quite filled with thirsty burgagers. Policemen and

excisemen from time to time tried to put a stop to this selling of liquor without a license, but the herd, until very recently, continued triumphant.

It is an amusing sight to watch these village cattle on their setting out and returning from the moor, a portion of which, in earlier days their very own, is now rented by the inhabitants. Indeed, so far as I know, the only thing which at all resembles it is found in the account given by Sir Francis Head of the pigs and swineherd of Nassau, in his "Bubbles from the Brunnens."

The houses of Warkworth, with few exceptions, have no available access to their premises from behind. The herd, therefore, in the season of summer, at a fixed hour, begins his progress each morning at the bottom of the town-street, and at his accustomed signal, there issue from the front doors or passages of the houses in rotation, the cows, for whose well-being he is responsible during the bright long day. At milking time he drives them gently home, and each animal, knowing its own doorway, steps in, or waits for admittance, as the case may be, with lowing eagerness for further attention.

This want of double entry is much to be regretted, as it is by no means conducive to the cleanly appearance of our village.

In earlier times, our people must have had in many things odd ways, and truly, so primitive in their simplicity, that they would startle us if practiced now. As an instance, some years ago, a frugal housewife lost a pig, stolen or strayed. On the following Sunday, after service, the sexton, mounting a conspicuous gravestone, proclaimed the loss, and offered a suitable reward for the recovery of the missing grunter. This incongruous proclamation occurred, I believe, about the period of a somewhat eccentric vicar, of whom too little has been remembered. It is said of him that he was so much respected that it was the custom for his parishioners to form two lines along the churchyard path, through which he made triumphant progress on his way to church each Sunday. As he grew older, and his eyes became dim, he was subject to mistakes in the service. He was also impatient of correction as will shortly appear.

One morning, in reading the Psalms, he turned over two leaves and went on. The clerk below him, for it was in the days of three-deckers, saw the mistake, and in a gentle voice exclaimed "You're wrong sir!" "Never you mind," said the

vicar testily, "Never you mind,—go you on," "I can't go on sir," recalcitrated the clerk, "for I don't know where you be." It is not recorded how the altercation ended.

In those days the roads were so impassable during the winter months, that coals could only be obtained by being conveyed in sacks on the backs of horse or mule, carting being out of the question. My informant told me of one winter within his recollection, when the only two animals used in this necessary labour were a mule and an ass. Indeed, from the great difficulty experienced in obtaining coal, persons, on going out to dinner at Christmas time, have been known to carry with them a block of coal as a most acceptable present to their hosts. This is hardly credible, but it is nevertheless most true.

Our roads are still as bad as roads probably are in any part of England, but even in this respect we must have made considerable progress. I have been told that the state of the roads, so late as fifty years ago, was so bad that the farmers could not use carts for the conveyance of their corn to Alnmouth, the sea-port of the day, and had to send it in sacks on horses.

At the same period almost every house had outside steps, or "mounts" as they were called,—two only now remain,—to enable the wife or daughter to mount the pillion on which they travelled, under the guidance of master or brother, to market or fair.

An odd custom prevailed as to marriages in those simple days. The bridal party proceeded in all solemnity to church, with saddle and pillion, if the distance required it; but, the ceremony over, the whole cortege, except perhaps the bride and bridegroom, who were allowed to take their ease, started off helter-skelter. As fast as spurs could drive them, splash through ruts of untold depth, and among swampy quagmires such as roads without a bottom seem rather to have pleasure in exhibiting,—the fair one clinging screamingly but trustingly to the rough rider before her,—away they went, to be the first in for the "kail," which, whoever arrived soonest at the house where the marriage feast was celebrated, failed not to claim.

Our villagers do not appear to have directed their attention much to scientific subjects; and yet there have evidently been times when discussions of that character took place among them. It is related of one of them, whose very name I have failed to ascertain, that he was sadly puzzled by hearing

some of his neighbours assert that the earth was a moveable body. He was an in-kneed sort of character, and fond of deciding questions for himself. And so, without making much ado about his unbelief, he went, under the shadow of night, to the church gates, and in front of them he planted his walking stick deep in mother earth. This was to be his crucial test. He returned early the next morning, and, finding the stick just as he had left it the night before, he decided finally and for ever against Galileo of old, and declared in the face of all opponents that the earth was as much a fixture as the everlasting hills.

In the churchyard may be seen three stone coffins, two of which were found during the extensive church repairs of 1860. One of these was lying about four feet below the surface, on the north side of the church, and contained nothing but earth, with the exception of an amorphous fragment of red tile covering the usual perforation in the centre of such coffins. The other was found resting on the flagged base of the chancel when the accumulated soil about the outside wall on the south front was removed. It had no cover, and was consequently filled with soil, amongst which there lay extended a perfect skeleton, which crumbled to dust almost before those who stood around it had time to take notice of its presence. For some time I was unable to make out how it could be that an interment so ancient should have been made on what to all appearance must have been at so early a period the exposed surface level. I now believe that its original location was the interior of the chancel, and that the coffin must have been removed to the place where it was found to make room for another burial.

The Parish of Warkworth is very extensive, and contains many Townships, of which not the least noteworthy is that of Acklington, now a separate ecclesiastical district. Many years ago, certainly before the fairies of Northumberland were lulled in eternal sleep beneath the moss-grown walls of Brenkburn, and, as I quite believe, long afterwards, all the old wives of Acklington were regarded by the rest of the parish of Warkworth as witches, and no person who had occasion to visit that hamlet would have considered it prudent to enter its dangerous borders without the protection of a sprig of rowan tree in the hand. My informant,—alas! no longer surviving to verify my words,—well remembered as a child having used this wise precaution. In addition to the rowan twig, it was considered necessary, in order to ensure complete

exemption from the evil influence, to clasp the hand over the thumb. In corroboration of all this, I may record, that to this day the red berries of the mountain ash form the principal decoration of my autumnal outlook ; and hither, in the season, the thrushes and blackbirds, from all the country round, mute indeed, but welcome, resort for provender so long as a single bunch remains dependent from my trees.

The fear of witches must have lingered longer here than in other places, for when I entered into possession of the living, in 1853, a number of what are here called self-holed stones, that is, stones with an accidental hole through their centre, such as we occasionally meet with on the sea-beach, probably bores made by the shell *Saxicava*, were found in the pantry and out-buildings. On inquiring as to their use it was replied that they were there to keep out the witches. It is strange in how many places, widely separated from each other, similar stories regarding witches are told. The one which follows, and which is localised at Acklington, I have also heard in Yorkshire. It is reported that an old wife at Acklington, who had gained an unenviable notoriety for being uncanny, was, once upon a time, upon the point of being detected in some mischief peculiar to her supposed unlawful dealings, when, through fear of discovery, she used her last of spells, and transformed herself into a hare. The weird animal was hotly pursued, and eventually wounded by a ragged stone. It was lost sight of in the neighbourhood of the cottage of the reputed witch ; but, on the following morning, was tracked to her door by the drops of blood. On entering, the pursuers found, not a hare, but the old wife ill in bed with a sore leg. And thus did she obtain the somewhat questionable preeminence of being regarded as the head witch of Acklington.

Some years ago, a fragment of a Roman altar was found in a field near Warkworth, an account of which has been given by Mr. Dickson in our *Transactions* ; and such names as Chester House, Street Head, and Gloster Hill, suggest further traces of Roman occupation in the district. Evidences are also forthcoming of denizens of these localities of a much earlier date, of whom, notices may be found elsewhere. In order to elicit inquiry, it may be well to notice the name of a farm at Acklington, viz., Cavil Head. This may have been a corruption of Gavel Head, highest land, as the situation indicates. But into what fields of romance we might enter by supposing that "Cavil" is the local word for casting lots ; and that in years long ago, before railways, before coaches,

may, even before Cocker or Wingate had existence, these lands may have been gained by a far-off owner by "Kevels."

"We'll cast Kevels us amang,
See wha the man may be—
The Kevel fell on Brown Robyn,
The master man was hee."

*Report of Sir Walter Elliot's Address at the Alnwick Meeting,
August 17th, 1868.*

AFTER dinner, Sir Walter Elliot stated that at the recent meeting of the British Association, at Norwich, he took the opportunity, as the Delegate of the Club, of mentioning, in the botanical section, the discovery of new plants by the Club at their meeting of the preceding month, adverting, at the same time, to the utility of such continued local observations, and to the value of local Faunas and Floras so determined. Mr. Berkley, the distinguished Fungologist, President of the Biological section, bore similar testimony, and instanced, in confirmation, the labors of the one with which he was more immediately connected, in Northamptonshire. A specimen of *Medicago*, found at Melrose, forwarded by Mr. Jerdon to Professor Balfour, was exhibited to the section, and was pronounced by Mr. Bentham to be *M. maculata*; but as the botanists present are aware, *M. denticulata* and *M. minima* have also been discovered. Dr. Balfour also showed a species of *Hieracium*, found by his class in an excursion to Selkirk, in the month of June last, which Mr. Bentham identified as *H. collinum*, a well-known continental species, but new to the British Flora, and which as now discovered in Selkirkshire, may not improbably be found to occur also within the limits of the Club's explorations.

A paper was read by Professor Lawson of Dublin, on the distribution in Great Britain of a rare moss, *Buxbaumia aphylla*, and on its occasional occurrence in localities from which it seemed again to disappear without any apparent cause. This called up Dr. J. D. Hooker, the President of the Association, who related a remarkable anecdote in connection with it, stating that it was the accidental discovery of this minute moss by his father (the late Sir William Hooker), near Norwich, where it has not been found again, that first directed his attention to the study of botany. Young William Hooker brought the tiny plant to his relative, Sir James

Edward Smith, then residing at Norwich, who was much interested in the discovery and described it for him. Dr. Hooker went on to remark on its occasional appearance at other places, among which he specified Alnwick Moor, where it had been once found by (if Dr. Hooker remembered rightly) Professor Dickie. He then suggested that perhaps this species of *Buxbaumia* might be a parasite, which would account for its irregular appearance in so many and such distant localities, and concluded by directing the attention of botanists to the determination of this point. Sir Walter added that he had been informed to-day, by Mr. William Boyd, that he and his brother had frequently met with *Buxbaumia aphylla* on the Cheviots. It is to be hoped therefore that the verification of Dr. Hooker's theory may be numbered among the achievements of the Berwickshire Club.

Sir Walter next offered some explanation of the Indian antiquities and relics which he had been requested to exhibit. They were obtained, he stated, from ancient sepulchral deposits on the Nilagiri mountains in South India. India abounds in burial-places of extinct races, the most common sort being indicated by rude circles of rough stones, within which are deposited urns containing calcined bones and sometimes a few simple ornaments or utensils. Others of greater pretension are formed of four stone slabs set up on end and surmounted by a fifth serving as a cover, and inclosing a square space within which the cinerary urns and ornaments are buried. These, which pass under the general name of *Pandu-kulis*, are for the most part above ground, but sometimes occur below the surface like the one examined by the Club before dinner, on the way down from Brislee Tower. These are common throughout the whole of India. Others peculiar to the Malabar coast are in the form of subterranean chambers, covered by a large discoid stone, from the shape of which they are called *Kodi-kals* or umbrella tombs. Those on the Nilagiri hills, from which the vessels and ornaments exhibited were taken, are different from all the above. Some are circular walls, built of uncemented rough stones, exactly like draw-wells. Others are formed of upright slabs of unhewn stone, inclosing a circle, and a third sort is in the shape of a conical tumulus or mound of earth. However diversified in form, the interior arrangement is alike in all. On removing the surface soil to the depth of two or three feet, one or more long, narrow, unhewn stones are discovered, placed horizontally and lying parallel to each other in a line point-

ing N.W. and S.E. On digging deeper, the spaces between and around them to the boundary wall, are found to be filled with broken pottery, the debris of cylindrical vessels, exhibiting a succession of rings as if turned on a lathe, of great variety of shape, with rounded bottoms but no handles, and with lids or covers, surmounted by rude figures of animals, birds, men, and sometimes by fanciful shapes of grotesque monsters. Having cleared out these and raised the horizontal stone, a simple flat vase, with wide mouth, of a finer description of pottery, is found under each, sometimes with a cover, sometimes without, often broken or even crushed by the weight of the superincumbent slab, in which is deposited the articles of value, with a few fragments of incinerated bone, and a little black mould. The ornaments and utensils, many of which were on the table, consisted of gold pendants, rings, fibulæ, chains, small vases of bronze or alloy, for containing scents, or the antimony or collyrium used to blacken the eyelids, the rods for applying the same, bronze-tazzas and caps, beads, &c. The workmanship of the gold articles was rude though elegant, many of them not chased with the graver, but the pattern formed by twisting thin plates or slips of gold into the required pattern. Others were more skilfully wrought in filagree, and some had the remains of stones or glass set in them. Several of the tazzas were remarkable for having a large, solid, oval knob in the centre, soldered to the bottom, the object of which is not apparent. Besides these were many implements of iron, much oxidized, as spears, knives, sickles, razors, tweezers, &c.; and some finer weapons, as spears set in a richly chased metal alloy, and in one instance, a metal mirror. A few weapons of bronze were also met with. Drawings and sections of the tombs, on a large scale, were attached to the wall; and drawings of the pottery and more perishable articles were handed round.

An Account of Eyemouth Fort. By JAMES HARDY.

THE only remains of the Fort at Eyemouth, (near which the members of the Club assembled), are "The foundations of the walls of a small quadrangular tower on the verge of a deep trench at the land-ward extremity of the cliff;" with a series of oblong mounds and pits scattered round it. This fortification, once a source of disquietude to both realms, was first erected by the Duke of Somerset, in 1547; his first survey

of it being made on the eve of that invasion of Scotland which terminated in the battle of Pinkie. On "Thursday, the first of September," says Patten, "Hys Grace, not with many mo then his awn bande of horsmen, roade too a towne in the Scottishe borders, standynge vpon the sea coaste, a vi. mile frome Berwycke, and is called Aymouth, whereat there runneth a rieur into the sea, ye whiche he caused to be sounded; and perseyuynge then the same well to be able to serue for a hauen, hath caused since their buylding to be made, whereof both Master and Capitayn is Thomas Gower. Marshal of Berwycke."* The object of Somerset in this war, was to obtain the hand of the young Queen Mary for Edward VI.; but the Scots, like the Earl of Huntly, did "not lyke thys wooynge"; and England more than ever was accounted their "auld enemy." Thomas Gower, the governor, was ancestor in line of the present Duke of Sutherland. Sir George Douglas, a man who "would not be won without money," stipulated to have this office as the price of his treason.† In 1550, by the convention of Boulogne, the forts of Dunglas, Lauder, Roxburgh, and Eyemouth, were ordered to be demolished, three months after the treaty was concluded. Before this was carried into effect, the English garrisons left not off still to molest and pillage the country in their vicinity. By an act of the Scottish Council, 22nd May, 1550, it is complained that although the forts of Roxburgh and Eyemouth were to be rendered against a certain day, and not to be rebuilt by either of the nations, "nochttheles the personis Inglismen presentlie being in the saidis fortis, daylie and continewalie makis incursions upoun our Soverane Ladyis lieges nixt adjacent unto thame, reifis, spulzeis, and oppressis thame, tending to do that is in thame to violate and brek the Pece, contrair the myndis of the Princis." Good lieges were charged by Proclamation, to apprehend them, whensoever this should happen, and hold them as just and lawful prisoners.‡ To further certain purposes of state policy, the French king, in 1557, advised the Queen Dowager of Scotland to re-edify the fort at Eyemouth, in direct violation of the treaty between the kingdoms, and with this design M. D' Oysel, "ane man of singular guid judgment, and well experimented in warres, and greatlie esteemed in France for the same," is deputed to

* Expedition into Scotlande. (Dalyell's Fragments), p. 29.

† Tytler's Hist. of Scotland, III, p. 577.

‡ Keith's History, (Spottiswoode Society), I., p. 448, 449.

the Queen and her Council.* With a party of engineers, protected by French soldiers, the fort was again reared, while constant recriminations took place between them, and the garrison of Berwick, who made frequent excursions, to interrupt the construction of the rival stronghold. These were so frequent, "that three skirmishes, attended with considerable effusion of blood, are recorded to have been fought between them and D' Oysel's troops in one week. A field, a little northward from the fort, goes by the name of 'Bare-foots'; and there is a tradition that it got its name from a battle being there fought between the Scots and English, in which the former were called out to engage without having had time to put on their shoes."† A burn, too, nearer Eyemouth, is called the "Dead man's burn," from the number of combatants said to have fallen there. D' Oysel garrisoned the fort with one hundred and twelve men, principally composed of foreign mercenary troops. After mutual incursions, he himself took up his residence among his countrymen, to direct a system of annoyance against the English. In the summer of 1558, the French and Scots garrison at Eyemouth surprised a party of the garrison of Berwick, on Halidon Hill, who were protecting the inhabitants of Berwick in mowing and carrying home their hay, and who, expecting no trouble from the Scottish side, "used out of their armour to shoote, boule, coyte, and exercise such lyke games of pleasure." The English were driven back three several times, till Sir James Croft, the governor, "comming from Berwicke used such diligence and policy in the mater, that the Scottes and French were repulsed and constreyned to retyre, withdrawing backe into Aymouth, after they had continued in skirmishe from one of the clocke till it was paste foure, with no small losse on bothe partes."‡ In the same year, there happened "ane singular combatt upon horseback with spears," between the celebrated warrior Sir William Kirkaldy of Grange, and Ralph Eure, brother of Lord Eure, "commonly called Evers," on Halidon Hill, in presence of the garrisons of Berwicke and Eyemouth, in which the "laird of Grange rane his adversar, the Inglishman, throw the shoulder blaid, and aff his hors, and was woundit deadlie, and in perill of his life."§ Holins-

* Lindsay's Chronicle, p. 513.

† Carr's Hist. of Coldingham, p. 66.

‡ Holinshed's Scotlande, p. 488.

§ Lindsay's Chron. p. 525.

hed in his account of the combat, derived from eye-witnesses, says "Maister Eure was hurt in the flank." About the end of 1558, Lord Eure, then governor of Berwick, made an in-road towards Eyemouth, in the neighbourhood of which he burnt a mill, a kiln, and some houses.* This was not the only attack to which the town had been liable; for, sixteen years before that, in July, 1542, the English had ravaged Ayton, Aymouth, and other towns in the Merse.† Such enterprises were not of long duration, for by the first article of the treaty of Cambray, 2nd April, 1559, "the fort built at Aymouth, shall be demolished within three months after the conclusion of this treaty, nor shall there be built or refortified any other place of strength contrary to the present treaty.‡" But it was only partially pulled down, for it is again the occasion of an article in the Treaty of Peace at Edinburgh, 6th July, 1560, whence we learn that "although the same fort be in some sort demolished, yet not so as was agreed upon; therefore, it is now appointed, agreed, and concluded that the fort of Aymouth shall be utterly demolished and razed before the end of four days after the demolition of Leith shall be accomplished. And in the demolishing of the said fort, such Scottish men as shall be deputed thereunto by the Commissioners, shall be at freedom to make use of the labours of English pioneers."§ The retiring English army, on reaching Eyemouth, demolished the fortifications according to agreement.|| In the interval, August, 1559, John Knox had advised the English again to seize and garrison it; otherwise it would be pre-occupied by France.¶ Mary, July, 1561, before she embarked to return to Scotland, represented to Throckmorton, the English ambassador in France, that one cause of contention was removed: "the fort at Aimouth is razed to the ground."** But, although dismantled, both realms kept their eyes on it. Surlabas, the French commander, had told Mary "that it were good to take heed to Aeymouth and Dunbar."†† Of this Elizabeth got apprised, and

* Redpath's Bord. Hist., p. 592.

† Pinkerton's Hist. of Scotland, II., p. 377.

‡ Keith's Hist. I., p. 445.

§ Keith's Hist. I., p. 291, 292.

|| Tytler's Hist. III., p. 126.

¶ Tytler's Hist. III., p. 104.

** Keith's Hist. II., p. 55. Camden's Elizabeth, p. 66.

†† Keith's Hist., II. p. 70.

conveyed orders to the Earl of Bedford, the English warden, to seize the position. Bedford, a prudent and judicious man, writes, 18th August, 1565, to Elizabeth, acknowledging the receipt of "her letters for the taking and fortifying of Aymouth, to the utmost of his power, but lays before her the many difficulties in taking and sure keeping thereof, and so he will wait further orders."* He again writes to the Earl of Leicester, from Berwick, 26th October, 1565: "I am advertised foure or five wayes that the Scottish Queen meaneth to take Aymouth, and that shortly. I have written heretofore that it hath been often viewed, and now I write that it will be fortified."† But nothing was done eventually. Queen Mary, 15th July, 1566, accompanied by 800 or 1000 horse, passed through the town; Sir John Forster, the English warden depute, escorting her with 60 horse, to near Eyemouth. The fort of Eyemouth henceforth disappears from the page of history. I cannot enter upon the annals of the town. In later times, two circumstances, interesting to us as naturalists, have been chronicled, although, perhaps, now forgotten. Two whales were brought ashore. 1752, "on Friday, the 19th instant (June), another account says the 12th, a whale appeared near the shore of Eyemouth, and, having received some hurt, as is supposed, it could not get to sea again, and was, without much difficulty, killed and hauled on shore by the fishermen. It measures 52 feet in length."‡ Again, on the 15th September, 1817 (harvest had scarcely commenced then), "a dead whale was towed into Eyemouth harbour by the fishermen. It measured 62 feet in length. Both its jaw-bones were broken. Eyemouth, for several days, was crowded with visitors, to get a sight of this monster of the deep."§

* Keith's Hist. III., p. 339.

† Keith's Hist. III., p. 376.

‡ "Newcastle Journal," June 27, 1752.

§ "Berwick Advertiser."

Harbottle Castle. By GEORGE TATE, F.G.S., &c.

(Read at Alwinton, June 25, 1868.)

HARBOTTLE, or, as it was written in 1244, Herbottel, is derived from two Anglo-Saxon words—*here* an army, and *botl* an abode or dwelling—and means the army or military station or dwelling. Older than the castle, there had been a stronghold, and probably, too, a mote hill, like those of Wark, Elsdon, and Haltwhistle, on which the ancient inhabitants held their meetings to settle their disputes, and award justice, in accordance with ancient custom. It was in the royal franchise of Redesdale, which, according to a charter quoted by Dugdale, was held in Saxon times, by Mildred, the son of Ackman; but, in 1076, William the Conqueror gave the lordship of the valley and forest of Redesdale, with its castles, manors, lands, woods, pastures, waters, parks, and royal franchises to his kinsman, Robert de Umfranvill, knight, lord of Toures and Vian, otherwise Robert with the beard, to be held by the service of defending that part of the country from enemies and wolves, with that sword which King William had by his side when he entered Northumberland.* Excepting during short intervals, this franchise was in possession of this family till 1436, when Sir Robert Umfreville, a vice-admiral of England, dying without issue, the lordship of Redesdale, including Harbottle, was inherited by Sir Walter Taylbois, lord of Hepple, as descendant of his great-grandmother, who was daughter of Robert de Umfreville, and wife of Gilbert de Burroden, and who died in 1381.† Inquiry was made, at this time, into the character of the tenure by which it was held; and it was concluded to be by royal power or great sergeantry, and that the relief due from it to the King was one year's rent, which, at that time, was assessed at £6 11s 4½d, and no more, on account of the war with Scotland. From failure, again, in male heirs, Harbottle passed, in 1541, to Eliz. Taylboys, wife of Thomas Wymbyshe, by whom it was exchanged with Henry VIII., for other lands, sometime about 1546. It remained the property of the Crown till 1604, when James I. granted it to his favourite, Lord Home; but, on his death, it reverted to the Crown, and not long after,

* For his services at the Conquest Umfranville was further rewarded by the barony of Prudhoe, the parish of Alwinton, the manor of Fawdon, and the manor of Humbleton in Rutlandshire.

† A long and interesting history of the Umfrevilles is given in Hodgson's Northumberland I., part III.

in 1614, the King granted to Home's daughter, and to her husband, Theopolis, Lord Howard, the reversion of "all that manor of Redesdale, and the manor and castle of Harbottle, with all the lands belonging to each of them." This branch of the Howards did not, however, flourish in Redesdale, although they made war against the smaller proprietors respecting the tenure of their lands. Perhaps, the Howards impoverished themselves by their litigation; for most of their own estates passed away from them in the course of the seventeenth century, by sales, to various parties; and in 1750, Overacres, the last remnant of this great estate, was sold to the Earl of Northumberland. The castle and manor of Harbottle came into the possession of Widdrington, whose daughter married Sir Thomas Gaiscoign. They were subsequently sold to the family of Clennel, and passed to Percival Clennel, by whom they were bequeathed to Thomas Fenwick of Earsdon, who took the name of Clennel; and they now belong to his grandson.

The extent and character of the royal franchise appear from the proceedings before the Justices in Eyre, when, in 1291, Gilbert de Umfreville claimed the right to hold pleas before his own Justices in Harbottle, with its several members,—Ellesden, Otterburn, Troquenne, Wodburn, Chestrehope, Leme, Monkridge, Crossanet, Lynescheles, Bromhope, and Gerardscheles, and through the whole vale of Rede. In 1293, he claimed to have, at Harbottle, a weekly market on Tuesday, and a fair yearly, on the day of the nativity of the Blessed Mary (September 8); and also to have gallows, tumbrell, pillory, and tolls; and that no sheriff or bailiff of the King should enter his franchise to exercise any office, unless by default of his own bailiffs execution should be neglected.* These were royal powers, and of their exercise examples appear in the Hundred Rolls, one of which shows the swift and savage manner in which capital punishment was inflicted. Thomas de Holm was taken within the franchise; but he escaped from prison, and fled for refuge to Alwinton Church, where, before the coroners, he foreswore his country; but Simon Smart, and Benedict Gley porter of Harbottle, beheaded him at Simonseth,† in the body of the county, and took his head thence, and hung it on the gallows at Harbottle.‡

* Placita de quo Waranto, p. 593.

† Rot. Hund, p. 22.

‡ Simonside, near Rothbury, which is beyond the Redesdale franchise.

Harbottle Castle, according to a letter addressed by Richard de Umfreville, in 1221, to the Chief Justiciary of England, was built by Henry II., whose reign extended from 1154 to 1189; but the erection must have been in the early part of that reign, probably about 1160. This was a great era for castle building; at that time Wark Castle was rebuilt by the King, and Prudhoe and Mitford were erected by their respective owners. Built at the royal expense, on the estate of a vassal, there must have been special reasons for the erection of Harbottle Castle; and so we are told that this castle was useful, both in times of peace and of war, situated, as it was, in the midst of the great waste near the marches of Scotland; and that the King had raised it there as a help to the whole county of Northumberland, and to the bishoprick of Durham.

Not long after its erection, it suffered from hostile attacks, and was taken by William the Lion, when, in 1174, he made a destructive inroad into Northumberland; but Odenel de Umfreville, its owner, turned the tide of war by his gallant defence of his other castle, Prudhoe, and compelled the Scots to return northward, to be ignominiously defeated before the walls of Alnwick Castle, where the Scottish King was taken prisoner.

As Richard, the son of Odenel, had joined the nobles who resisted the tyranny of King John, his Northumberland estates were confiscated in 1216, and given to Hugh de Baliol; but Henry III., five years afterwards, restored them to Umfreville. Harbottle Castle had been injured and weakened by the Scottish attacks, and Richard de Umfreville began to repair and fortify it; but in such a manner as to excite suspicions of his fidelity. The King, therefore, commanded the Sheriff of the county to summon twelve knights to view the castle, and to reduce the fortifications to the state they were in previous to the war;* but, against this command, Umfreville remonstrated, and urged, as reasons for its preservation, that it was useful, both in time of peace and war, and had been built by Henry II.; and this remonstrance saved it from demolition; for it was so strong in 1296, that after the Scots had besieged it two days, and found they could not take it, they abandoned the siege, and marched on through Redesdale and Tindale towards Hexham, burning and wasting the country, and committing horrid cruelty on the inhabitants. Again was the castle threatened with destruction in 1322;

* Rot. Lit., Claus. 4, Hen. III., p. 436.

for, in a treaty made between the ambassadors of Edward II. and Robert Bruce, it was agreed that Harbottle Castle should not be repaired for the future, and that if peace were established by the feast of St. Michael, it should then be entirely destroyed. Though peace was not concluded, yet the King, in accordance with the general terms of the treaty, commanded John de Penreth, constable of the castle, utterly to destroy it, and the Sheriff of the county to assist in the work,* but the continuance of war, and the distracted state of England caused this order to be neglected. Subsequently, it was used for the custody of prisoners; and, in 1336, the right to have a gaol at Harbottle was established, by patent from the King.† Scottish warfare, however, had again seriously weakened the defences of the castle, and Gilbert de Umfreville, in 1381, set forth, in a petition to the King and to parliament, that it was so much ruined by the wars with the Scots, as to be insufficient for the custody of prisoners; and he, therefore, desired that all prisoners taken within the liberty of Redesdale, should be kept in Prudhoe Castle until he could repair that of Harbottle; and this request was granted for ten years.‡ We find Harding, the historian, who is called “squier of the Lord Umfraville,” was, in 1245, resident at Harbottle Castle.

There are few other notices of Harbottle Castle until we reach the sixteenth century; but it must have been in a habitable state in 1515, when a warden of the marches resided there, and when it was the temporary abode of Margaret, Queen of Scotland, and the birth-place of the mother of the future Sovereigns of Great Britain.

On the 7th of October she was admitted into the castle, but no Scotswoman was permitted to enter with her; and no female, indeed, appears to have been in attendance; and yet, after forty-eight hours of mortal agony, “she was delivered of a fair young lady, who, with such convenient provisions as could or might be had in this barren and wild country, was christened the next day after.” And thus, on the borders of the cheerless wastes of Redesdale, was ushered into the world, Margaret, Lady Douglas, who afterwards was the Countess of Lennox, mother of Lord Darnley, and grandmother of James I. of England. The Queen’s situation here is described by Lord Dacre as “uneaseful and costly, by occasion of far

* Cal. Rot. I5, Edw. II., m. 16, m. 10.

† Cal. Rot. 10, Edw. III., m. 53.

‡ Cal. Rot. 25, Edw. III., m. 31.

carriage of every thing ; and so we are minded to move her grace to Morpeth as soon as conveniently she may." Christopher Gurney, in a letter to Henry VIII., on December 28, narrates the royal removal:—

" On Monday, the 16th November, the Queen of Scots removed from Harbottle to a place of Sir Edward Ratcliffe's called Cartington, four miles off, where she remained four days. Removed on Saturday to the Abbey of Bryngborne five miles from Cartington ; on Monday, to Morpeth, where she was met by Lord Ogle, the Abbot of Newminster, and other gentlemen, by appointment of Lord Dacre. She was so feeble that she could not bear horses in the litter, but Dacre caused his servants to carry it from Harbottle to Morpeth. . . . I think her one of the lowest brought ladies with her great pain of sickness I have seen and scape. . . . Nevertheless she has a wonderful love for apparel. She has caused the gown of cloth of gold and the gown of cloth of tynsen sent by Henry to be made against this time, and lokes the fashion so well, that she will send for them and have them held before her once or twice a day to look at. She has within the castle 22 gowns of cloth of gold and silks, and yet has sent to Edinburgh for more, which have come this day. She is going in all haste to have a gown of purple velvet lined with cloth of gold, a gown of right crimson velvet furred with ermine, three gowns more and three kirtles of satin. These five or six days she has had no other mind than to look at her apparel."*

During the sixteenth century Harbottle Castle assumes a peculiar importance from its relation to the abnormal condition of the district in which it stood ; and surveys, reports, and letters tell of the state of the castle, and throw a broad light over the social condition of Redesdale. The castle stood near the head of the cultivatable portion of Coquetdale ; and some other cultivated lands were in Redesdale and other valleys ; but for miles and miles in the higher valleys and on the ridges and hills there were only bleak moors and wild wastes. About the beginning of April, according to Bowes and Ellerker's survey† in 1542, the inhabitants take all their cattle into the high waste grounds towards the Borders, and build for themselves frail huts they call *Scheals*, and depasture their cattle in the valleys and hopes, as well as on the high grounds till August ; and this they call *Summering* or

* Letters and papers, Hen. VIII., Vol. II., p. 316.

† Printed in Hodgson's North. II., part III.

Shealing. Each household pays two-pence for this *Summering*, and none above a groat, no matter how many cattle any one may have ; and yet “the poor men find their farms dear enough,” for they escaped few years without greater loss of cattle from the Scots and Redesdale men than would be paid for better pastures, besides incurring danger to their own lives in defence of their cattle. So great was the insecurity, that no one was willing to inhabit Kidland even rent free. After the month of August the people left the hills and either lived in pele towers or under their protection. Within a distance of six miles from Harbottle there were sixteen of these strong Border peles.* Living thus constantly in the midst of danger and frequently engaged in strife, these men grew up fierce and lawless, and as ready to attack others as to defend themselves. Considering the want of cultivation, both Redesdale and Tindale were greatly overcharged with wild inhabitants. Redesdale was the more populous, but the Tindale men were more able and active ; and the two could send forth fifteen hundred men on horseback and foot. “There be more inhabitants than the said countries may sustain to live truly upon a farm of a noble rent. There do inhabit in the same place three or four households without any other crafts to live truly, but either by stealing in England or Scotland.” A kind of clanship prevailed ; in Tindale one half bore the surname of Charlton, and the other half those of Robson, Dodds, and Milburn ; in Redesdale, Hall was the most prevalent name, and next to that were Read, Potts, Hedley, Spoors, Dawg, and Fletcher ; and this clanship gave rise to feuds and revengeful retributions, and obstructed the administration of justice ; so much so, that, although both dales had been annexed to the county and were amenable to the kings’ courts, yet royal warrants frequently could not be executed in them.

From two sources misery spread over the district—from Scottish raids and from the plunderings of the Tindale and Redesdale men. For Border raids both Scots and English were equally blameable. “At every full moon destructive frays carried fire and sword to their homesteads. Villages, castles, and manor houses were given to the flames ; border hate and Border warfare recognised no distinction of age or sex, or things sacred or profane. Devastations were followed

* Pele towers were at Alwinton, Clennell, Lynn Brig, Biddleston, Barrow, Scirenwood, Prendwick, two at Alnham, Great Ryle, Farnham, Low Trewitt, Heppel, Thropton, Cartington, Harecleugh.

by famine and pestilence.” As an example of such raids, take one made in April, 1522. “The whole country was made a smoking waste from Hume Castle to Dunse and all along the East Border from Roxburgh to Kelso, between the Tweed and the Teviot southward to Fernihurst.” The Scots made reprisals and the neighbourhood of Harbottle suffered. Philip Dacre writing to Lord Dacre on July 23rd, 1522, says “the Scots made an inroad into Harbottle and carried off a cart horse of yours, two nags of the Peals and half a score of nolt. On August 7, twenty Scots preket at the horse at Alwenton, and were attacked by fourteen Englishmen at Singundside swire, two of the Douglasses were slain and one taken, but all the Englishmen were saved.”

The evils occasioned by internal lawlessness were even worse. Sir William Eure writing from Harbottle on October 27th, 1527, says:—“Sir Wm. Lisle along with Armstrong, Nixon, and Croziers commit burnings, murders, herthschippes to the utter undoing of the middle marches, and have well nigh utterly destroyed the head of Northumberland and the water of the Tyne.” Eure then lay at Harbottle “which being the middle part and uttermost frontier of the middle marches, and the greatest hurt to Scots and outlaws in times past, the outlaws come down the water of the Tyne, which being eleven miles distant from him, he could not defend both places.” Sir John Widdrington, who, as warden of the middle marches, occupied Harbottle Castle in 1538, writing from it on July 12th, charges the disorders of the district to the inhabitants of Tindale who along with certain Northumbrians, traitors, rebels, and fugitives in Scotland, and by confederation with Liddelsdale Scotsmen, committed in Northumberland depredations, daily and nightly, which were very feebly resisted by the inhabitants; part of the gentlemen had fled from their houses, and Harbottle Castle being twelve miles distant could help but little, yet it kept the neighbourhood around in safety. A complicated system of watches had during a long period been established all along the Borders; but so disorganised and insecure were Redesdale and Tindale that special arrangements for more effectually watching, directed rather against internal plunderers than foreign aggressors, were made in 1542, the expense of which pressed heavily on the district. “The uttermost townships and villages lying endlong this waste towards Redesdale having been much inquieted and troubled are now constrained to keep watches nightly for the safe-guard of themselves and

their goods from the incomes of thefts and spoils continually and nightly attempted and enterprised in these parts by the Tyndale, Redesdale, and other Scots thieves, brought and conducted into these parts for such evil purposes by the said Tyndales and Redesdales, so that the countries adjoining these dales suffer as much as other countries, adjoining the Scottish Borders."

Such was the abnormal condition of the district, which caused the wardens of the marches and other officials to report on the state of Harbottle Castle, and to urge repeatedly, that it be repaired and strengthened. In 1523, it is said to be in sore decay in timber, lead, and walls. An important survey was made under royal authority, by Bellys, Collingwood, and Horsley, which gives the fullest account of the state of the castle;* and, as we wander round the ruins, to note the architectural character of this ancient stronghold, we shall take that survey with us, and refer also occasionally to subsequent reports made by Parr, Bowes, and Ellerker.

This castle stood proudly on the south bank of the Coquet near to Harbottle burgh, on a hill which was steeply scarped on all sides, excepting a portion on the east. Built as we have seen about 1160, it had, like most Norman castles a donjon or keep, a barbican or entrance gateway, an inner and an outer bailey, enclosed by curtain walls which were strengthened by mural towers. Around the keep was a fosse, and around the whole enceinte was another deep fosse which was crossed by a draw-bridge. All these arrangements are similar to those of Alnwick Castle; but the keep of Harbottle was much smaller, and not round but quadrangular. Outside of the entrance gateway was a barmekyn, an outer defence chiefly for the protection of cattle.

On the south side stood the keep, on a conical hill, rising steeply out of the hill on which the other parts of the castle were placed,—probably the mote hill of the older inhabitants. Of small extent is the area on the top, so that the erections there, though high, were never of great extent. According to the survey, the hall, of which the foundations remain, was 48 feet long and 30 feet broad, the roof of which was "evell covered with slate;" but the walls had been in fair condition, as only 13s. 4d. are set down "to pynde them with ston and rowthe cast with lime." Here was the chamber in which

* This survey is in the Record Office, but a copy of it is printed in Hartshorne's *Feudal and Military Antiquities*, p. 57-59.

the mother of the future sovereigns of Britain was born; "ther must" it is said, "be two new dormontes of vi yards longe for a chalmere callyed the *qwennes chambere*, will cost for makynge and caryage from Brenborne Wode xijs." The most prominent remains of the keep are two great masses of masonry, one of which seems to have slidden down the hill out of its place, and the other hangs out of the perpendicular on the hill side. The masonry is in courses of rough ashler work, without marked characters, but approximating more to the Edwardian than to the Norman period. At the base, however, of the slidden down mass are alternate courses with a chamfer, similar, as Hartshorne states, to what appears in Northampton Castle and Peverel's Castle in the Peak, which are known to have been erected in the early part of the reign of Henry II.; and this architectural feature is confirmatory of the historical evidence as to the time when Harbottle Castle was erected.

The two baileys are overlooked by the keep, the inner one lying towards the north-west, and the outer one to the north-east, and they are still divided from each other by a wall, partially ruined, running from the keep to the outer curtain wall. The gatehouse and the walls of the inner ward, were, in 1537, rent and decayed, and wanted much of the battlement; and the cost of repairs would amount to £60. In this part were a round tower and the chapel chamber, and the great chamber, all of which must have leaden roofs, "caste newe, for they are verry evylle, and raynes in many places." Here, too, were the good draw-well, the kitchen, the brew-house, the bakehouse, and the horse mill. The good draw well remains, and some portions of the curtain wall are standing on the south and west sides, and the foundations of the whole are traceable. Fragments there are of a tower on the north side, where, probably, the postern was situated, which required an iron gate, 6 feet 9 inches high, and 3 feet 9 inches broad, and which would cost £6. A mound of debris, connected with the dividing wall, a little northward of the keep, may be the ruins of the gatehouse. Green sward covers the foundations of all the other ancient structures within this ward.

Fewer remains there are of the outer ward. On the east side stood the barbican, or entrance gateway, which, in 1537, was covered with slate, and had the roof and battlement of the wall much destroyed; iron gates were required for it, 10 feet 3 inches high, and 9 feet 9 inches broad, to make which,

would take two tons of iron, costing for the iron, £9, and £5 10s. for the workmanship; mounds of debris indicate its site. A tower was on the north, with a good timber roof, but wanting a covering of lead, and doors and windows. From this north tower, to the keep, the compass of the wall was thirty roods, ten of which must be new made. The outer wall was six feet thick, and twenty-seven feet high, and the repair of the whole would cost £150. Within the outer bailey were the stables, which were in ruins; and their repair, so as to accommodate one hundred horses, and making above them garners for corn and lodging chambers, would cost £100. Of these buildings, and of the outer wall, there are few traces; but the fosse around the keep, and that also around the enceinte, are still very distinct.

“It is marvalus needfulle,” says the Survey, “for the relief of the countrie, in time of warre, to have a new barmkyne mayd, where the old barmkyne was, which wall contenes in lengthe xxx rode, with a little gaythouse at the comynge to the said barmkyne, wych gaythouse yet standes ajoynyng before the gayttes of the castelle, the barmkyne wall must be four yards hye, and a yard thyke, and the costs and charges hereof, by estimation, lx *li*.” Of this barmkyne, which stood on the north-east, there are now no remains. The cost of the whole reparations was estimated at £443 2s. 4d., exclusive of the purchase of fourteen fotheres of lead.

When Bowes and Ellerker surveyed Harbottle Castle, in 1542, it was still ruinous and decayed. William Parr, describing its state in 1543, calls it the key, and most necessary place for the conservation of Redesdale, but so extremely decayed and ruined, that garrisons could not remain there without imminent peril and danger from the fall of the walls and timber. Bowes, in 1546, urged that the castle should be taken into the King’s hands, as neither the owner nor his ancestors had, for a long time past, done any reparation; and, after this, some reparations were made, but in an inadequate manner, for Sir William Bowes, when again reporting on the state of the Marches in 1550, says:—“The King’s castle of Harbottle is assigned to the keeper of Redesdale, and standeth very conveniently for the same. It was, of late, in extreme ruin, and is partly reparated; albeit, there is not, in the said castle, either hall, kitchen, or brewhouse; and the prisons, also, be not sufficiently strong nor large enough to contain so many prisoners as at some times shall be requisite to be had in ward there.”

After this, Harbottle castle seldom appears in the page of history; and the time came when the union of Scotland and England, under one Sovereign, brought peace to the Borders, and led to a gradual change in the lawless habits of the Border men. Castles, peles, bastiles, and barmkynes, being formed for defence against an enemy, rather than for comfort to a resident, were not adapted to the new and improved social conditions, and were allowed to fall into ruin, or to be utilised as quarries, whence stones were taken to build modern halls and houses. Some, indeed, fell before a royal mandate; for James I., in order to extinguish the memory of past hostilities, proscribed the use of the name *Borders*, and substituted that of *Middle-shires*, and ordered all places of strength therein to be demolished, excepting the habitations of noblemen and barons; their iron gates to be converted into plough-shares, and the inhabitants to betake themselves to agriculture and the peaceful arts.*

Zoological Jottings at North Sunderland in 1868.

By the Rev. F. R. SIMPSON, Vicar.

On February 11th, Partridges paired.

March. Plovers paired on the 5th, Humble Bees were abroad for the first time on the 26th, and a Bat was abroad on the evening of the 30th.

April. The first Brown Butterfly (*Venessa urticæ*), was seen on the 14th; the Smaller White Butterfly (*Pieris Rapæ*), on the 25th; and the Corn Crake (*Crex pratensis*), on the 27th.

May. The Queen Wasp (*Vespa vulgaris*), was seen on the 1st; the Painted Lady Butterfly (*Cynthia Cardui*), on the 6th; the Large White Butterfly (*Pieris brassica*), on the 8th; the Cuckoo on the 16th; the Flycatcher on the 22nd; and the Red Admiral Butterfly (*Venessa atalanta*), on the 27th.

June. The Holly Blue Butterfly was seen on the 4th; and a covey of Partridges were able to fly on the 10th.

August 8. White Butterflies have been very numerous during the past week, and their Caterpillars very destructive of cabbages and broccoli.

* Redpath, p. 706.

September. The Redwing (*Turdus iliacus*), was seen on 21st; and four Woodcocks were shot at Beadnell on the 22nd. A specimen of the Thresher, or the Fox, or Long-tailed Shark (*Carcharias Vulpes*, Cuv.), taken, on the 29th, in herring nets, measured as follows:—Length of body, 5 ft. 9 in., of tail, which was imperfect, 5 ft. 2 in.; pectoral fin, 21 inches long, and 10 inches at the base; ventral fin 9 inches long, and 7 inches broad at the base; dorsal fin 11 inches long, and 10 inches broad at the base; the girth behind the pectoral fins was $47\frac{1}{2}$ inches in circumference; the estimated weight was between 25 and 26 stones. On the 30th the first Wild Geese (*Anser palustris*) were seen flying southward.

October. On the 14th the Jacksnipe (*Scolopax Gallinula*) was seen; and on the 20th three pied Partridges were shot out of a covey on the Glebe farm.—The herring fishery has not been up to the average this year.

On November 11th and 12th, there were very heavy takes of White Fish—Cods, Haddocks, and Whittings—the heaviest ever known at Sunderland Sea Houses. Several boats had from 70 to 90 stones of fish each.

On December 26, a Wild Swan (*Cygnus musicus*) was shot at Beadnell.

The Swallows (*Hirundo rustica*) were first seen this year on April 25th; they began flocking on July 30th; and most of them left on September 5th—only a few stragglers remaining.

The Mountain Sparrow (*Passer montana*) is not, I am inclined to think, so rare in the district as has been supposed. This is the fourth year in which I have observed this bird; and this year I have taken three specimens—one on January 26, one on March 10th, and the third on December 26—all roosting in the ivy on the south front of the Vicarage house.

Osmunda regalis. This Royal Fern still flourishes in Rothbury Forest, northward of the Coquet, an unrecorded station, where it is indigenous. Ruthless collectors have helped to eradicate it from Chevington and Roughting Linn, where it formerly grew.—George Tate.

Notice of Falco rufipes ; the Orange-legged Hobby. By
GEORGE TATE, F.G.S.

FROM Mr. Middleton Dand I received an unknown bird, which had been found in a dying state in the garden at Hauxley, on October 9th, 1868. After a careful examination, it proved to be the *Falco rufipes*, of Bechstein, or *Falco vespertinus*, of Linneus, the Orange-legged Hobby, one of the rarest of British birds. It had been flying about the neighbourhood for a few days previously, and was shot at and wounded, from the effects of which it had died. This species was first noticed as British, by Yarrell, in 1830, when four specimens were obtained in Norfolk. Subsequently, it was taken in Ireland, in Yorkshire, and Durham ; but it has not previously been seen in Northumberland or in Scotland. It is a native of Russia, where it is common, of Poland and Austria, and it ranges southward to Tuscany.

As this bird has been seldom described, the characters of this Northumbrian specimen may be given ; in the examination of it, I have enjoyed the aid of Mr. Thomas Gibb, an experienced Taxidermist.

It is a female in full plumage ; 12 inches long ; the wings when extended measuring $27\frac{1}{2}$ inches across, and when closed reaching nearly to the tail. The beak is short, strong, and dark, but orange at the base ; the cere and eyelids are of a reddish orange, and the irides dark brown ; the eye is encircled with dark brown, and between the angle of the mouth and eye is a triangular patch of dark brown. The forehead is grey, tinged with light brown ; the head, neck, and upper part of the back are russet brown. The back, wing coverts, tail and upper tail coverts are leaden grey, transversely barred by brownish black. The primary wing quills are also brownish black, barred with white ; but these bars, which are numerous and distinct on the outer quills, gradually lessen in number and become indistinct on the inner quills. The second primary quill is the longest ; and the inner web of the first quill is abruptly cut out about half an inch from the end. The throat is white, slightly tinged with light brown ; the breast and the under surface of the body are of a pale cinnamon brown, with a few feathers of dark brown. The tarsi and toes are orange colour ; the claws are small and not so curved as in other falcons. The food seems to have been entirely insects ; in its stomach were found the remains of beetles, but so decomposed that their affinities could not be

determined; and mixed up with them were a few pieces of bent grass quite undigested, and which may have been taken up when this Falcon was feeding on beetles.

Notice of the Red or Common Squirrel, (Sciurus vulgaris, Linn). By GEORGE TATE, F.G.S.

At the present time, when the origin and the distribution of species are keenly discussed, it is desirable to record the appearance or disappearance of particular plants or animals in a district. Mr. J. C. Langlands having reported to me the occurrence of common squirrels at Old Bewick, in 1868, where they had never been seen before, I was induced to inquire whence they had come, especially as they are very partially distributed in Northumberland, and are of recent origin in the northern part of the county. Finding that they had appeared not long ago at Coupland, I obtained information from Mr. M. T. Culley, who states—"They were first seen in Coupland woods about ten years ago; they feed on fir cones, and are becoming very numerous, and are frequently seen running on the lawn in front of the house. No one has the least idea where they came from, but they are spreading into the neighbouring woods. One is said to have been seen in Akeld dene, about seventeen years ago, which probably was the beginning of them in the neighbourhood."

Most probably, however, these squirrels had migrated into Northumberland from the adjoining counties of Roxburghshire and Berwickshire, in which they are now numerous, pretty extensively distributed, and increasing; though even in these counties they are of comparatively modern introduction. They are plentiful in the neighbourhood of Dunse, Coldstream, Melrose, Jedburgh, Hawick, and other places. Dr Charles Stuart informs me that when he came to Berwickshire, nearly twenty-one years ago, no squirrels were in the neighbourhood of Chirnside, though they were then in the fir woods of Dunse Castle; but by and bye they extended to the Chirnside district, and now abound in the Pistol plantations on the Blackadder estate. In the woods about Wolfelee, Hawick, where they are now so numerous and destructive as to be a perfect pest, they have not been resident so much as half a century. But they had rapidly increased after their first appearance; for when Sir Walter Elliott left his home—Wolfelee—in 1820, there was not one in that part of the country, but when he was at home, in 1835, he found his father offering a reward for every squirrel killed.

Whether squirrels are indigenous to the Borders, or existed there in ancient times, is doubtful; the climate is evidently not unsuited to them; and it is possible that the extensive destruction of forests and woods, from the period of the Norman Conquest till the accession of James I. to the English throne, may have caused the extirpation of the original breed; but of this there is not evidence. The skins of squirrels, as well as of cats, foxes, hares, rabbits, kids and lamb, were articles of commerce in the district in 1377, when, according to a charter for pontage, one hundred of them was charged a toll of one halfpenny on passing over Alnwick bridge; but such skins may not have been grown in the district. Wallis, in his *Natural History of Northumberland*, in 1768, does not mention squirrels. The present breed appears, from good evidence, to have been introduced in the early part of the present century. Mr D. Milne Home informs me that he had heard his father say that a Duchess of Buccleuch, being fond of the animal, imported it from England to Dalkeith, and that it spread thence into the neighbouring counties. A letter from the Earl of Home confirms the account, and says:—"I believe it to be perfectly true that my grandmother, Elizabeth, Duchess of Buccleuch, was the person who imported squirrels into Scotland. I cannot tell the year, but, to the best of my recollection, it was more than sixty-six years ago. The Duchess had been used to see them, and to admire them, on her English estates, and desired to see them at Dalkeith Park. She did not foresee that the little animal, comparatively harmless in England, where the trees are chiefly oak, and other deciduous kinds, would be very destructive where the fir predominates. From Dalkeith, where they soon increased rapidly, the squirrels extended to Arniston, about twelve miles from Dalkeith, and then on to Selkirkshire. For many years their progress seemed arrested; but a good many years ago—I am not able to say what year, but I think it was before my father's death, in 1841—the first squirrel appeared at the Hirsell (near Coldstream.) Its appearance created great astonishment among the people, who had never seen one. In a very short time the squirrels increased, and they now are only too plentiful; but as the woods here are chiefly oak and other deciduous trees, they do no material harm. The squirrels also abound at Douglas Castle, in Lanarkshire, where, the trees being chiefly fir, I have been forced to order their destruction." It is unfortunate that a creature so pretty,

lively, and active, should do so much damage. Sir Walter Elliot says:—"The mischief they have done to trees is enormous. I have hundreds of trees in my own plantations—Scotch firs—which have been ringed near the top many years ago, and are consequently ruined. A friend, who was here two years ago, was struck with the show of the ravages committed by the squirrels here, the root of every spruce fir being thickly strewed with the young shoots and twigs cut off for food by the destructive little creatures." Squirrels have not yet reached the eastern part of Northumberland, notwithstanding there are extensive woods around Alnwick and other places in that district.

Anecdote of a Swallow. Communicated by the EARL OF HOME.

ON the 7th of November last, long after the swallows had taken their departure, a swallow, probably a young one left behind by the others, came into my library—used as the family drawing-room,—it perched on the rod of a window curtain and passed the night. When the window was opened in the morning, it went out, and was observed flying about all day, feeding on insects; the frost had been sharp—thermometer 20° in the night. In the evening the swallow returned, and took up its perch in the same spot. On the 8th, frost continuing, it again went out, flew about feeding during day, and returned again at sunset, and again perched in the same place. On the 9th, it pursued exactly the same course, returning to its perch. On the 10th, the weather changed and became milder, the bird went out as usual, but was not seen again, and probably set off to try and overtake its companions. Mr. A. E. Knox, a great ornithologist, and author of "*Ornithological Rambles in Sussex*," happened to be here (at the Hirsell) at the time, and took the greatest interest in the swallow, saying he had never heard of or seen such a thing.

MISCELLANEA.

The Missel Thrush (*Turdus viscivorus*) which was very rare here when I came to Berwickshire—twenty-one years ago—is now so common that it has driven away the Common Thrush, or Mavis (*Turdus musicus*), altogether, or nearly so. The Starling (*Sturnus vulgaris*) remains with us all winter; but formerly it left the neighbourhood, and returned about the 1st of March.—*Dr. Charles Stuart, Chirnside.*

The Moss Flora of the Eastern Borders. By JAMES HARDY.

"Natura enim thesauros suos occultat, indefessi laboris præmia." G. H. WEBER, *Spicileg Floræ Goetingensis*, 1778.

1. *Andreaea*, *Ehrhart*.

1. A. ALPINA, *Dill*, *L.* Moist rocks among shady ravines in the higher hills. N. On Cheviot, in Henhole and the Bizzle, particularly the upper part of the latter. Of a deep brown purple, and very beautiful, while the water continues to trickle over it. It grows in masses, not in tufts.

2. A. RUPESTRIS, *L. Hedw.* Among the higher rocks on the hills, growing in tufts. N. "On Cheviot."—*Winch.* "Near the summit of Hedgehope."—*Dr Johnston.* Abundant among the Cheviots; summit of Newton Tor, Watchlaw, Hartheugh, also on the Cunion Craggs and Dunmore. It descends to the junction of Common and Broadstruther burns, about 450 feet. "On Simonside hills."—*Sir Walter C. Trevelyan.* B. "At Ord-wheel (Hoardweil), Berwickshire."—*Dr Johnston.* Scattered over the Drakemire moor and bogs, and the dykes of Buncle-Edge woods; also patches on a dyke near Preston.—*J. A. R.* On Ruberslaw, Eildon Hills, and near Yetholm.

2. *Sphagnum*, *Dillenius*.

1. S. CYMBIFOLIUM, *Dill. Ehrh.* Bogs and peat-mosses, abundant.

2. S. COMPACTUM, *Bridel.* On wet moors.

3. S. MOLLUSCUM, *Bruch.* On boggy moors. R. Near Jedburgh.—*A. J. B.* By the side of a foot-drain on the moor near Penmanshiel.

4. S. ACUTIFOLIUM, *Ehrh.* In bogs, the most common of the species. Often of a pink or lilac colour.

5. S. FIMBRIATUM, *Wils.* B. In old peat-pits in Penmanshiel Moss.

6. S. CUSPIDATUM, *Dill. Ehrh.* Wet bogs, and in old peat-pits floating in water, frequent.

7. S. CONTORTUM, *Schultz.* Near well-heads. B. In a foot-drain, on the moor near Penmanshiel. Probably generally diffused.

8. S. SQUARROSUM, *Persoon.* In wet bogs, peat pits, and marshy ground. B. "Peat pits on Coldingham moor."—*Dr Johnston.* N. Plentiful in the marshy ground at the top of the Bizzle. Also in Roxburghshire.

OBS. S. RUBELLUM, the only other British species, is likely to occur among our "moors and mosses many;" but it has not been sought for. The Sphagna are easily determined with the aid of the microscope. The crystalline net-work of their foliage is of the highest beauty.

3. Archidium, Bridel.

1. A. PHASCOIDES, *Bridel*. B. "Berwickshire."—*Dr. Johnston*. In fields near Lintlaw.—*J. A. Phascum alternifolium*, *Flora East. Bord.*, p. 260-261.

4. Phascum, L.

1. P. SERRATUM, *Schreb.* B. Near Berwick, "in corn fields of a light peat soil, not common."—*Dr Johnston*. Near Lintlaw.—*J. A. R.* Near Cherrytrees.—*W. B. B.* Mr Boyd's specimen recalls the remark of Weber on this species, which Sir J. E. Smith terms "Herba omnium ferè minutissima." "Cæterum etiam nudo oculo hæc species, si ætate profectus est, facile ab aliis distinguitur, oculosque colore capsularum intenso purpureo allicit."—*Weber*.

2. P. MUTICUM, *Schreb.* B. On sea-rocks, below Swallow Craig, Oldcambus, on the soil above a yellow ant's nest, was the remark with which I recorded this species. The ants have deserted the spot, but the moss remains confined to the narrow precincts of a rock top.—On wet sandy soil, and on an earth-capt wall, Lintlaw.—*J. A.*—*R.* Near Cherrytrees.—*W. B. B.*

3. P. CUSPIDATUM, *Schreb.* In cultivated grounds and gardens common. Var. PILIFERUM, *Schreb.* B. On the sea coast near Siccac Point.

4. P. NITIDUM, *Hedw.* B. "Wettish dean a little to the south-east of Raecleughhead."—*Rev. Thomas Brown*. Fries (*Flor. Suecica*) still retains Dickson's name of *P. axillare*, for this species.

5. P. SUBULATUM, *L.* On soils on moors of a light clay, and on pathways in woods, common where it occurs. B. Penmanshiel moor and wood; Brockholes dean; Oldcambus dean and sea-banks; on a slip of earth, Dunglass dean, &c. N. On the wayside for Langleyford, on Whiteside, behind Homilheugh, and in bogs near Ilderton Dod. R. Near Jedburgh.

6. P. ALTERNIFOLIUM, *Br. and Sch.* R. On soil near Cherrytrees.—*W. B. B.*

5. Gymnostomum, Hedwig.

1. G. TENUE, *Schrad.* N. "Sandstone rocks, rare. On a rock at the side of the footpath leading through the plantation above Ord-mill."—*Dr Johnston*. On a stone near a waterfall in Lyham dean.—*Messrs Boyd*. Limestone rocks by the sea-side at Scremerston.—*W. B. B.* B. "Bank of Langtonlees burn."—*Rev. T. Brown*. Face of the rock in a sandstone quarry at Preston.—*J. A.*

2. G. RUPESTRE, *Schw.* B. Two dwarf examples, and neither of them well marked; the one from Mr. W. B. Boyd, gathered near Abbey St. Bathans; the other from J. Anderson, probably from the Whitadder. R. It will probably occur in the southern

district of Roxburgshire; I have an example from Mr. Sadler, marked "Broadlee, Liddesdale;" and it grows at St. Mary's Loch.

3. *G. CURVIROSTRUM*, Hedw. B. In dense rusty green cushions on dripping rocks between Milldean and the sea, near Coldingham, in fruit; the lower part of the plant converted into calcareous tufa; also on dripping rocks near Gunsgreen; and near the waterfall at Bilsdean, in East Lothian.

4. *G. MICROSTOMUM*, Hedw. R. From a railway cutting near Jedburgh.—*A. J.*

6. *Weissia*, Hedwig.

1. *W. CONTROVERSA*, Hedw. On banks, &c., from the sea-coast to the bosom of our highest hills; occurring both in Henhole and the Bizzle; abundant. The capsules, if gathered too early, show no teeth; sometimes these are absent in older examples.

2. *W. MUCRONATA*, Bruch and Schimp. In moist ground, much exposed to the blast. B. Sea-coast at Siccar Point; fields near Penmanshiel; on the moor at Piperton Hill; moors above Abbey St. Bathans; on Buncle edge, &c. N. Between Spittal and Scremerston; in Henhole and the Bizzle.

3. *W. CIRRHATA*, Hedw. R. On a thatched roof at Bonjedward.—*A. J.* Very common on walls and trees at Cherrytrees.—*J. B. B.* Among porphyritic rocks near the summit of the Eildon hills. N. On the wall ascending to Whitside, near Wooler; and on sandstone rocks and walls at the Trickley plantations; also on Homilheugh, on porphyry; and on sandstone rocks on the moor at Old Bewick. B. On a wall near Blackhouse; and on the roof of a cottage at Buncle.—*J. A.* Near Gunsgreen; and on the roof of a cottage at Coldingham.—*W. S.* Near Allanton.—*Mr. Kelly.*

Obs. Dr. Johnston in Flor. East. Bord. gives *W. crispula*, without mentioning a locality. It has not, however, occurred under the many hundreds of crisp-leaved specimens that have passed under our observation. It is a mountain species.

4. *W. VERTICILLATA*, Bridel. On dripping rocks, where the water deposits lime. B. "On wet rocks at Eyemouth and Coldingham shores."—*Rev. A. Baird.* On rocks below Dowlaw, and in Dunglass Dean, in fruit; rocks at Coppermine, &c. N. "In the dean at Twizell Bridge."—*Dr. Johnston.*

7. *Rhabdoweissia*, Br. and Schimp.

1. *R. FUGAX*, Br. and Sch. N. In moist clefts of rocks, and forming the covering to tattered pieces of soil that overhang small rifts of peat among the stones and rocks, in the Bizzle and Henhole; not unfrequent; chiefly on the eastern exposures.

8. *Brachyodus*, Nees and Hornsch.

1. *B. TRICHODES*, Nees and Hornsch. B. On a block of old red sandstone lying among long grass near the burn side, Lintlaw burn; and also near Billie Castle.—*J. A.* N. On a limestone rock, Lyham dean.—*Messrs. Boyd.* Rare.

9. *Blindia*, Br. and Schimp.

1. *B. ACUTA*, Br. and Sch. On moist subalpine rocks, and occasionally on soil, in tufts, or large sheets. N. Abundant in the moist parts of the Bizzle, where a kind of it floats in water; also frequent in Henhole. It grows again at Harthope Linn on the S.W. base of Cheviot, and ascends into the heart of the hill to the moist rocks half way up. Tufts of it grow in Langlee Crag ravine, and others on Common burn, not so far up as the shepherd's cottage. I did not find it at Linhope.

10. *Cynodontium*, Br. and Schimp.

1. *C. BRUNTONI*, Br. and Schimp. In tufts in the fissures of dry mountain rocks. B. On rocks in Oldcambus dean, also at Netherbyres, and near Ayton, and Preston Bridge. N. Frequent in Humbledon dean, on the rocks around the Maiden or Wishing well, and on Humbleheugh; also on the Careburn rocks; in a ravine near Newton Tor; and on sandstone at Routing Linn. I have also found it in fruit in the centre of the Bizzle.

Dr. Johnston's *Dicranum polycarpum* will probably be found to belong to this species. It is usually described as having the capsule without wrinkles, but quickly dried unripe capsules, and even old ones, are often far from smooth. I have once or twice got the curious *Boreus hyemalis*, in a recently developed state, crawling over tufts of this moss.

11. *Dicranum*, Hedw.

1. *D. POLYCARPUM*, Ehrh. Among moist mountain rocks and on walls. B. A tuft or two on a wall in Bowshiel dean, parish of Cockburnspath, as recorded in "Bryologia Britannica."—On the trunk of a Scotch Fir at Brockholes.—*J. A.* N. Frequent among shady rocks in the heart of the Bizzle, and in Henhole; on walls about Langleyford; also on the Careburn rocks; on Cunion crags; and on the House of Crag.

2. *D. PELLUCIDUM*, Hedw. By the shady sides of rivulets. It is more frequent and luxuriant among the Cheviot ravines, than the banks of our open Border streams. It is, however, very common in Dunglass dean. Var. *FLAVESCENS*, Smith, in the Bizzle.

3. *D. SQUARROSUM*, Schrad. In boggy ground in upland moors and among the hills. N. "Hedgehope and Cheviot."—Winch. On Hedgehope, above Harthope Linn, in fruit; in Bizzle where the two streams meet; Henhole; Bellyside ravine; bog behind Homilheugh; Roddam dean; bogs between Prendwick and Alnham; Old Bewick moor, near the Raven Crag. "Haiden dean, plentiful, but not in fruit."—Dr. Johnston. B. In Sisterpath dean, and on Penmanshiel moor in fruit; also in Buncle wood. R. Near Jedburgh.—*A. J.*

4. *D. CRISPUM*, *Hedw.* "On the sides of drains cut through turfy bogs, not common. Below Shoreswood Hall, *Dr. Thompson*. In the dean below Allerton Mill." *Dr. Johnston*, Berwick Flora, II., p. 47. R. Near Cherrytrees; the herbage only.—*W. B. B.*

5. *D. VARIUM*, *Hedw.* Wet clay banks; of general diffusion, and frequent. I have seen it in the Bizzle, but not in fruit.

6. *D. RUFESCENS*, *Turn.* N. Wet clay banks; South Middleton dean, growing among *D. varium*, as if portions of this had been diseased.

7. *D. CERVICULATUM*, *Hedw.* On the borders of drains in clayey or turfy soil. B. In Langstruther moss, near Penmanshiel.—In Coldingham moss.—*W. S.* Buncle wood and Drakemire.—*J. A.* Plentiful on burn sides in Lauderdale.—*Mr Kelly*. N. With *Campylopus torfaceus*, in Coldmartin moss.—Side of wet ditches near Hetton Hall.—*W. B. B.*

8. *D. HETEROMALLUM*, *Hedw.* On clayey soil on banks, and in woods, and by the sides of ditches. It often covers a large extent of moorland pine-wooded soil with its green silky herbage; unproductive of capsules, till the wood is thinned. It ascends to the top of the Bizzle and Henhole ravines, in a remarkably barren soil formed out of porphyritic debris.

9. *D. FUSCESCENS*, *Turn.* Among dry mountain rocks. N. On stones in the wood at the northern base of Yeavinger Bell; on large stones in Dunsdale wood; also on rocks in Henhole and the Bizzle, where it produces fruit in July; House of Crag; Union Crags; and Langlee ravine.

10. *D. SCOPARIUM*, *Hedw.* Shady banks and rocks, common; also on moors.

11. *D. PALUSTRE*, *Bridel.* In boggy ground, common. B. "Lamberton moor."—*Dr Johnston*. Coldingham moor, and in peat mosses. N. Boggy ground in Langleyford vale, on the Common burn, Broadstruther, &c. R. Fairnington bog.—*A. J.*

12. *D. MAJUS*, *Twin.* Shady rocks, &c. B. "Below Marshal meadows, near the fall of the cascade."—*J. V. Thompson's* Plants of Berwick. On the sea-banks, between that and Berwick; in the Black craig, Peasedean; and elsewhere. N. Harthope Linn; near the Linn at Langlee crags; in the ravine below the lower Linn at Linhope; Roddam dean; Dunsdale wood; Yeavinger Bell; Bizzle, &c. R. Fairy dean.

13. *D. ELONGATUM*, *Schwagr.* This fine addition to the British Flora, I found in July, 1868, a little below the eastern summit of Hedgehope, where it grows in large compact yellow-green tufts, closely matted below with brown fibrils. The situation is much exposed to the blast, and is not particularly moist, the surrounding herbage being short heather. Mr. Wilson determined the species, and also sent me North American examples in fruit, gathered by Mr. T. Drummond. It has been objected that this cannot be *D. elongatum*, but one of the numerous forms of *D.*

fuscescens, because the points of the leaves, under a high magnifier, are minutely toothed. The same objection, however, applies to the North American examples, which correspond in the minute denticulation, as well as in other particulars. Perhaps Schimper by his "*folia integerrima*," means so only in comparison with allied species. We scarcely expect a species of this section without the points of the setulæ roughened. A much shorter moss, straw-coloured, with green tips, and more like *fuscescens*, grows on the ridge of Cheviot, and on moist rocks in Henhole, not so compact or radiculose in the tufts; and Mr. Wilson thinks it may not be essentially different. When dried it does not become corky like *D. elongatum*; but can be separated readily.

12. *Leucobryum*, *Hampe*.

1. *L. GLAUCUM*, *Hampe*. On heaths moderately moist, common. I did not observe it on the wet moors about Broadstruther; on Cheviot it occurs at the south-eastern end.

13. *Ceratodon*, *Bridel*.

1. *C. PURPUREUS*, *Bridel*. On walls, tops of cottages, barren woods, and bare places on moors; common. On Cheviot it appears in the barren soil at the top of the Bizzle; and begins to prevail on similar ground, as the bogs are left, in going above Harthope Linn; owing its elevation to this soil.

14. *Dicranodontium*, *Bruch and Schimp*.

1. *D. ARISTATUM*, *Schimper*. (*Bryol. Europ. Supplem.*) *Forma foliis minus asperis brevioribus*. R. Mr. Jerdon sent me this in 1864, saying that it was not uncommon on the Roxburghshire heaths. Mr. Wilson refers it to this species, which, I believe, is unrecorded for Britain. It grows also at Loch Skene.

15. *Campylopus*, *Bridel*.

1. *C. DENSUS*, *Schleich*. Var. *FRAGILIS*, *Brid*. N. In small quantity, in moist places in Bizzle.

2. *C. TORFACEUS*, *Bruch and Schimp*. On peaty soil, on moors, and in damp woods. B. Abundant at the edges of peat pits in Penmanshiel moss; Buncle woods. N. Cold Martin moss; Hebburn and Detchant woods; moor above Broadstruther; on Cheviot near Bellyside ravine, and also on the south-eastern end, and at the top of the Bizzle; Dunmore, Ilderton Dod, and Hedgehope.

3. *C. FLEXUOSUS*, *Dill. and L.* Swampy moors on a peaty soil. N. In abundance in a peatery near the foot of Dunmore, and of a smaller size on the adjacent moor. It occurs also in the Bizzle, on Hedgehope, and near Alnwick. B. An obscure form of it on the moor near Drakemire, in hollows where water stands all the year.—*J. A.* In fruit in Penmanshiel moss. It grows also in Buncle wood in a variety of forms and sizes.

4. *C. PARADOXUS*, *Nov. Sp.* Externally this resembles a

dwarf form of *C. flexuosus*. Mr. Wilson, to whom I sent it, cannot refer it to any described species, and proposes the above name for it. "It comes nearest to *C. Schwarzii*, but the narrower nerve, &c., connect it more with my *C. Shawii*. It seems almost to connect these two species." (*Wilson, MSS.*) It is of a dark green colour above, and yellowish beneath, and grows in masses mixed with *Dicranum heteromallum*, in a fir wood (Trickley planting) on the top of Whiteside hill, near Wooler. The rock beneath is white sandstone, and there is only a thin layer of peat between the surface and the rock.

16. *Pottia, Ehrh.*

1. *P. CAVIFOLIA, Ehrh.* B. "On earth-capt dikes, frequent in this neighbourhood," (Berwick).—*Dr. Johnston*. The remark regarding its frequency requires to be modified; a fragment of this species has occurred among W. Shaw's gatherings near Eyemouth, but no where else as yet. The walls up the Tweed have not been re-examined.

2. *P. MINUTULA, Br. and Sch.* B. In wet hollows of the red clay of old red sandstone origin, on the sea banks at Greenheugh, Swallow Craig, and Siccar Point—Eyemouth Fort.—*W. S.*—On a very strong red clay among grass on the farm of Sligh-houses.—*J. A.*

3. *P. TRUNCATA, Br. and Schimp.* On banks, recently exposed soil, fields and pathways. Common. The varieties likewise occur.

4. *P. CRINITA, Wilson.* B. Along all the Berwickshire coast, as far as Berwick, among rocks, and on earthen walls. Common.

5. *P. HEIML, Br. and Schimp.* B. On the sea-coast of Berwickshire less frequent. Cove shore, Greenheugh, Siccar point, below Dowlaw, Coldingham sands, Deil's Dander, Eyemouth Fort, Lamberton Shields, Marshall Meadows. R. Near Cherry-trees.—*W. B. B.* In the example from Cherrytrees the leaves are entire.

17. *Anacalypta, Rochling.*

1. *A. LANCEOLATA, Rochl.* B. On the moist clay on the sea-banks at Greenheugh, Oldcambus; and about Coldingham sands. Near Eyemouth, and on the Ale water.—*W. S.* N. "Near Alnwick."—*Mr R. C. Embleton in Winch's Flora.* On a wall near Lyham village.—*W. B. B.*

18. *Desmatodon, Bridel.*

1. *D. NERVOSUS, Br. and Sch.* B. On soil among rocks, and in shady fissures on the steep sea-banks near Oldcambus. Eyemouth fort, and sea-banks near Gunsgreen.—*W. S.* Frequent where it occurs.

19. *Distichium, Br and Schimp.*

1. *D. CAPILLACEUM, Br. and Schimp.* Shady hollows among

mountain rocks. N. "On Cheviot."—*B. G. through V. and D.* "Cheviot and Hedgehope."—*Winch.* Very fine, and of great length, in the Bizzle. R. Penton Linn.—*A. J.* On a stone and lime wall, Cherrytrees.—*J. B. B.*

A variety grows in the Bizzle, with the foliage much shorter and stiffer, and the tufts more compact; sometimes it is intermixed with *Grimmia torta* Mr. Wilson, who has seen it, considers it an intermediate variety between the type and the var. *brevifolium*, which he ("Bryol. Brit.") says has not been found in Britain.

20. *Didymodon*, *Br. and Schimp.*

1. *D. RUBELLUS*, *Br. and Sch.* Among shady rocks, on damp walls, &c.; rather frequent. B. Peasedean, Oldcambus quarry, Dunglass dean, Coldingham sands, Dowlaw dean, Ale water, sea coast near Berwick, Eyemouth, &c., Buncle, Allanton, St. Abb's Head. N. "East Ord," Roddam dean, Heathpool, Bizzle and Henhole, Harthope Linn. R. Near Jedburgh and Cherrytrees, and in the Fairy dean near Melrose.

2. *D. FLEXIFOLIUS*, *Hook. and Tayl.* N. On a sandy peat where the heather had been burned on Whiteside hill, close beside the eastern carved stone; also in the triangle between the roads that cross the hill, at the northern end of Trickle wood. It grows in beautiful green patches, with pretty yellow stems.

21. *Trichostomum*, *Br. and Sch.*

1. *T. CRISPULUM*, *Bruch.* B. In Fleurs dean near Coldingham; also on clay among dry rocks on Ale water; sea-banks near Oldcambus. This and the next two species are members of the English Flora, and this appears to be the first record of their occurrence in Scotland. They are chiefly maritime. They also appear to indicate the presence of lime.

2. *T. MUTABILE*, *Bruch.* R. Near Cherrytrees.—*J. B. B.*

Var. *BREVIFOLIUM*, *Wils.* B. In large tufts on the sea banks where the water trickles down in winter, and on dampish ground at Greenheugh, and the banks near Siccar point and Redheugh, and the banks south from Milldean, Coldingham, sometimes in fruit; also among sandstone rocks on the coast north from Berwick. N. Among rocks above Alwinton, on the Coquet, in company with *Blindia acuta*. This var. is *T. littorale* of Mitten.

3. *T. FLAVO-VIRENS*, *Br. and Schimp.* (Bryol. Europ.)

Var. *Foliis angustioribus margine subplanis.* B. Growing with the last on dry sandstone rocks to the north of Berwick; shady sea-banks near Siccar point. This species is one of the recent additions to the British Flora. Mr. Unwin, who sends me, with figures of the leaves, specimens from the original locality, remarks the great characteristic difference between this and the two former, "lies in the large diaphanous basal cells, and from their being partially continuous up the margin."

4. *T. TOPHACEUM*, *Bridel*. On moist rocks, and oozy places on the sea banks, and in shady ravines, coast of Berwickshire and North Durham; also inland. B. Pease dean, Preston quarry, Dunglass dean, Allanton, Ayton. N. Roddam dean, Lyham dean, Hetton burn, Langlee crag ravine. R. Near Jedburgh. The most remarkable locality for it is the top of a wall on Whit-side hill. There is considerable variety in size, colour, and in the number of teeth in the capsule.

5. *T. RIGIDULUM*, *Smith*. On moist rocks, and by the gravelly edges of nearly all our streams; ascending among the hills to Langlee crags, Common burn, Heathpool, and the Bizzle burn.

6. *T. FLEXICAULE*, *Br. and Schimp*. On clayey bogs and banks; not unfrequent. B. Abundant on the sea banks at Siccar point; also on moors at Penmanshiel; Dunglass burn foot; Fleurs dean; below Mildean; on Ale water; near Lauder. N. In Roddam dean; on Care burn; in Langlee crag ravine; and in the Bizzle. It appears to indicate the presence of lime; accompanying *Hyp. commutatum*, and a small form of *Hyp. stellatum*, that selects tufa-forming waters.

7. *T. HOMOMALLUM*, *Br. and Sch.* Ditch sides, and crevices in banks of a light barren clay, or sand, among the moors. B. Bowshiel dean; roadsides in Penmanshiel wood; Drakemire, &c. N. Kylvood; top of Whiteside hill near Wooler; Henhole; in the poor soil at the top of the Bizzle; Bellyside ravine; above Langleyford Hope.

22. *Tortula*, *Schreb.*

1. *T. ALOIDES*, *Br. and Sch.* N. Clayey banks beyond Spittal, and near Hudshead; and by the side of the Wooler turnpike near Scremerston. B. Sea banks above Burnmouth, and below Mildean.—*W. S.* Sea banks at Greenheugh, and behind St. Helen's Church. R. Among rocks in the Fairy dean.—*A. J.* In the summer the leaves appear like fragments of ruby wire.

2. *T. UNGUICULATA*, *Hedw.* On clayey banks, deserted quarries, wall tops, bridges, &c. Among the hills at Langlee crag ravine. The *Tortulæ* in general prefer the lower ground.

3. *T. FALLAX*, *Hedw.* In newly ploughed out fields recently limed; also in pastures; by road sides and on banks; not so frequent as the last.

4. *T. VINEALIS*, *Bridel*. Var. *FLACCIDA*. R. On a wall near Cherrytrees.—*J. B. B.*

5. *T. TORTUOSA*, *Web. and Mohr*. N. Among dry mountain rocks in large tufts. In crevices of rocks in the Bizzle, and also, but scarcer in Henhole; among the Careburn rocks, and in Langlee crag ravine. Sir W. J. Hooker found this in Iceland growing on lava. This species, with *Trichostomum flexicaule*, and *Neckera crispa*, furnishes a typical illustration of what Mr. Baker calls "the Xerophilous role of distribution." (North Yorkshire, p. 322.) In the Bizzle, I observed a plant that had fallen down,

and had been caught up as on a spit by some sharp piles of rough grass, on which it was flourishing.

6. *T. REVOLUTA*, *Schwæg.* On banks and walls, rare. B. "Banks above New-mills."—*Dr. Johnston.*—On a lime-capt wall Penmanshiel.—On a lime-capt wall near Coppermine.—*J. A. N.* On a wall near Bamburgh.—*J. B. B.* R. On a wall at Cherrytrees.—*W. B. B.*

7. *T. CONVOLUTA*, *Hedw.* On bare places by waysides, and in fields recently limed, especially where the lime heaps have lain. B. "Lamberton moor."—*Dr. Johnston.* Penmanshiel, Buncle, &c. N. Wooler turnpike about the 13th mile-stone. R. Near Jedburgh, and at Minto crags.

8. *T. OBLONGIFOLIA*, *Hook. and Wils.* On the hollow of a rock, where the rock has been hewn away for the walk, at the East Lothian end of the wooden bridge, Dunglass dean, in fruit, April 12th, 1867. It is confined to a very limited area; further up the walk, all the plants are the ordinary *T. muralis*.

9. *T. MURALIS*, *Timm.* Walls, stones, and tiled roofs; common.

10. *T. SUBULATA*, *Bridel.* In dry, somewhat shady banks and ravines; frequent. It has a liking to the vicinity of the sea; being sometimes washed by the spray, as near Siccar point. *Wahlenberg* noticed this preference in Norwegian Lapland. (*Flora Lappon.* p. 316.) Ascends to Langlee crag ravine.

11. *T. LATIFOLIA*, *Br. and Sch.* R. On a stone near Mount Teviot.—*A. J.*

12. *T. LÆVIPILA*, *Bridel.* N. On the stem of an oak in a wood on Wooler water between Coldgate Mill and Old Middleton dean. B. On elm and ash, Dunglass dean.—*Stanton cover*, near *Lauder.*—*Mr. Kelly.* R. Near Jedburgh, and in the Nameless or Fairy dean.—*A. J.* On elm trees at Cherrytrees.—*J. B. B.*

13. *T. RURALIS*, *Hedw.* On cottage roofs, and on links on the sea coast, and among bare sunny rocks among our deans, and the lower hills. Abundantly in fruit on a cottage roof at Cockburnspath old tower, on the east or open side, but sparingly on the west side where shaded by trees. *Scopoli* makes the remark that in Carniola it grows on the N. or W. aspects of cottage roofs. (*Flor. Carn. II.*, p. 324.) It extends to the Arctic Regions; (*Parry's Voyage*;) and has been found on the higher part below the snow line of the Mexican volcano, Oribaza. (*Ray Soc. Reports*, 1845).

14. *T. PAPILLOSA*, *Wilson.* On trees. R. On elm trees at Cherrytrees.—*J. B. B.* Near Chiefswood, Melrose.—*A. J.* B. On plane, elm, and ash trees near Sligh-houses; and on a crab near Lintlaw.—*J. A.* Woodhead, *Lauder.*—*Mr. Kelly.*

23. *Cinelidotus*, *Br. and Sch.*

1. *C. RIPARIUS*, *Walker-Arnott.* Var. *TERRESTRIS.* R. On a stone in a wet ditch near Jedburgh.—*J. A.*

2. *C. FONTINALOIDES*, *P. Beauv.* On stones, &c., in shallow streams. "In the Tweed at Carham and near Coldstream."—*Winch.* B. Near the waterfall in Dowlaw dean; Milldean or Coll burn; in the Eye above Ayton; Ale water, &c. N. In the Coquet above Alwinton; Cawledge burn, Alnwick. The Cheviot streams run too rapidly for its growth. R. Near Jedburgh.

24. *Encalypta*, *Schreb.*

1. *E. VULGARIS*, *Hedw.* On earth-capt dikes, banks, and among dry rocks on a very light soil; locally common. N. "Dykes on the Etal-road, above Prior-house."—*Dr. Thompson.* "Near Alnwick."—*Mr. R. C. Embleton.* Near Kyloe, and Lyham, and Henlaw, on walls; in Roddam dean; among rocks in the Kettle camp, Wooler; and in Langlee crag ravine. B. "Frequent near Eyemouth."—*Rev. A. Baird.* "Near Mordington house, abundant."—*Dr. Johnston.* Near the water-fall at Redheugh. R. Near Jedburgh, and Cherrytrees.

2. *E. CILIATA*, *Hedw.* N. In the moist fissures of rocks, on the northern side of the Bizzle; in some abundance. Sprengel (*Introd.*, pp. 228, 229), says this is one of the last mosses that disappear below the line of eternal snow.

3. *E. STREPTOCARPA*, *Hedw.* Among rocks in dry shady ravines, and on stone walls. N. "At the foot of Cheviot."—*Winch.* Not re-found there. On dry conglomerate and about tree roots in Roddam dean; also in South Middleton dean. B. On rocks on the Ale water below Ale mill, and on the Eye after its junction with the Ale.—On a lime-capt dike near Coj permine, rare.—*J. A.* R. Rocks by the side of the Oxnam near Crailing.—*A. J.* On a stone and lime wall, Cherrytrees.—*J. B. B.* The presence of the *Encalyptæ* appears to indicate lime in the soil.

25. *Hedwigia*, *Ehrh.*

1. *H. CILIATA*, *Hedw.* On rocks and walls, on dry exposed hills and moors. I could not find it on Dunmore, but it ascends to the Bizzle, although it is not frequent there. Var. *VIRIDIS*. On a wall near Cherrytrees.—*J. B. B.* This moss ascends to an alpine height in the Pic de Midi of the Pyrenees. (*Desmoulins*).

26. *Schistidium*, *Br. and Sch.*

1. *S. CONFERTUM*, *Br. and Sch.*—B. At Preston bridge.—*J. A.* R. Near Cherrytrees.—*W. B. B.*

2. *S. APOCARPUM*, *Br. and Sch.* On rocks and walls; particularly on stones in rivulets; frequent. Children, whose play-time has passed near rocky burn-sides, take notice of the fairy rosettes simulated by the expanded teeth of the capsules, which as Sir J. E. Smith well remarks are "pulcherrime rubri." Var. *STRICTA*, *Bridel*, an alpine form grows in Henhole, and in the Bizzle, of a purple brown, and resembling an *Andreaea*.

3. *S. MARITIMUM*, *Br. and Sch.* On rocks near the sea, on the coast of Berwickshire, and North Durham, and on the Farne

Islands. The distribution of this species extends to the coasts of Norwegian Lapland; (Sommerfelt), and the State of Maine in America. (Sullivant.)

27. *Grimmia*, Ehrh.

1. *G. PULVINATA*, Smith. On dry rocks and walls, and tiled roofs. It is a children's pet—their "pussy-cat." It does not rise high in the hills, being supplanted by *Racomitrium heterostichum*.

2. *G. TORTA*, Hornsch. N. In circular cushions, in the shady crevices of moist rocks, in the Bizzle, and about the middle of Henhole. "When dry, the tufts form firm rigid masses; when moist the dichotomous stems are exceedingly soft and flaccid, so that they can scarcely be handled without falling down." (Sir W. J. Hooker.) The falls of ice, clay, and stones in spring dislodge a number of specimens, which strew the bottom of the cliffs. There are two vars.; one shorter, stouter, and darker, tipped with apple green; the other much larger and narrower in its divisions, and of a pale brown, with light green tips. This Mr. Wilson attributes to the more or less crowded state of the foliage.

3. *G. TRICHOPHYLLA*, Greville. On dry mountain rocks and walls; rare. N. "On Alnwick Moor."—Winch. On rocks near the Maiden Well, Wooler, not in fruit. R. On walls, but rare in fruit, Cherrytrees.—J. B. B. B. Near Lintlaw and Hoardweil.—J. A.

4. *G. SCHULTZII*, Bridel. R. Among rocks on the Dunion, near Jedburgh.—A. J.

5. *G. PATENS*, Br. and Sch. N. Among mountain rocks, moist in winter, but dry in summer, on the northern side of the Bizzle; and on the west side and at the top of Henhole; also on the House of Crag. When moist it is very fragile and incoherent, like *G. torta*; sometimes the mere top is only green, the rest of the plant being a deep black.

6. *G. DONIANA*, Smith. On wall-tops and among dry mountain rocks. N. "Cheviot."—Winch. Among scattered rocks on the eastern summit of the hill; also at the eastern end of the southern Bizzle rocks; and near the entrance of Henhole. On a wall top on Whiteside hill, Wooler. B. On dike tops in Bowshiel dean, and at Penmanshiel, and near the site of St. David's Cairn, and on stones Drakemire moor. R. On walls near Cherrytrees.—J. B. B. R. Near the summit of Ruberslaw, and the Eilders.

7. *G. OVATA*, Web. and Mohr. N. Kylae crags.—Messrs Boyds and Jerdon.

Var. *CYLINDRICA*. Near Cherrytrees.—J. B. B.

8. *G. CONTORTA*, Wahlenb. N. Among fissures of dry rocks on Bellyside hill, 1576 feet elevation; and among the highest rocks on the west side of Henhole, May, 1868. Mr. Wilson, who sends me a specimen, gathered among the Grampians by John Sim, June., 1868, remarks that my example has the "leaves more elongated, narrower, and more evidently white-tipped."

28. *Racomitrium*, Br. and Sch.

1. *R. ACICULARE*, *Bridel*. On wet rocks and stones in upland rivulets, and by waterfalls. Ascends the Cheviot ravines.

2. *R. SUDETICUM*, Br. and Sch. N. On dry exposed mountain rocks. "On Cheviot."—*J. V. Thompson*, 1807. "On Cheviot, Hedgehope, and Alnwick Moor."—*Winch*. Over nearly all the high Cheviot rocks, but fruiting best in the Bizzle and Henhole; House of Crag. *Trichost. microcarpon* of *Winch's* Flora.

3. *R. FASCICULARE*, *Bridel*. On rocks and sometimes on walls, among the hills; ascends to the Bizzle.

4. *R. HETEROSTICHUM*, *Bridel*. On exposed rocks and walls among the hills; common.

5. *R. LANUGINOSUM*, *Bridel*. Over-lapping stones upon the ground in the higher moors. It gives a greyish colour to every collection of weather-beaten stones among the Cheviots. It is a prevalent moss in Lapland; (*Wahlenberg*); is a native of the American Arctic regions; (*Parry*) and *Harvey* found it on Table mountain, Cape of Good Hope. (*Ray Soc. Rep.*)

6. *R. CANESCENS*, *Bridel*. On stony and barren places among the hills. N. Abundant in Langleyford vale, nearly down to Middleton Hall; and also on the Lammermoors. (B). Var. *ERICOIDES*, by road-sides on Coldingham moor. *Caspar Bauhin* was the first to figure this variety, and the name is his. *T. canescens* was found by Sir W. J. Hooker to be the prevailing moss on the roughest tracts of Iceland lava. (*Mackenzie*.)

29. *Ptychomitrium*, Br. and Sch.

1. *P. POLYPHYLLUM*, Br. and Sch. On rocks, heaps of stones, in shady places and in ravines. B. "On rocks in the lower part of Lumsden dean.—*Dr. Johnston*. Bowsheil dean, and several places near Penmanshiel; near St. Helen's Church; side of the Pease burn below Black crag, on new stones cast over the Railway bank; near Netherbyres, Blackhouse, Buncle, and Lintlaw; generally in scattered tufts. N. Near the Maiden well, Wooler; rare in that district. R. Roxburghshire.—*A. J.* Cherrytrees.—*W. B. B.*

30. *Orthotrichum*, *Hedwig*.

1. *O. CUPULATUM*, *Hoffm*. On parched, barren, sun-beat rocks, which receive moisture in winter and spring; and on stones by the side of streams, not uncommon. Ascends to Heathpool, and Langlee crag ravine.

2. *O. ANOMALUM*, *Hedw*. On rocks and stones by the side of streams and lakes; common. Ascends to Heathpool Linn, and above Alwinton.

3. *O. PALLENS*, *Bruch*. R. On trees near Melrose.—*J. A.*

4. *O. STRAMINEUM*, *Hornsch*. R. Not uncommon on oaks near Melrose.—*J. A.* N. On trees near Middleton Hall. B. On elm near Sligh-houses.—*J. A.* Near Eyemouth.—*W. S.*

5. *O. AFFINE*, *Schrad.* On trees, stones and walls, common. At Langleyford growing on a straw-roof.

6. *O. RUPESTRE*, *Schleich.* On rocks. N. "On the Craigs above Easington-house below Belford."—*Dr. Johnston.* "On limestone rocks at Carham and Wark on the Tweed."—*Winch.* On stones near the Maiden well, Wooler. B. "At Ord-wheel, Berwickshire, plentiful."—*Dr. Johnston.* R. On the Dunion.—*A. J. Cherrytrees.*—*J. B. B.*

7. *O. LYELLII*, *Hook.* On trunks of old trees; widely distributed on the Borders. B. Dunglass dean, Blackhouse, Preston, and near Lauder. N. On ashes near Earl, and on the North Middleton road between Wooler and Coldgate mill, and on oaks in Old Middleton wood; also in Roddam dean. R. Abundant near Melrose; found on the Alwen at Hillslap tower; Cherrytrees.

8. *O. RIVULARE*, *Turn.* On rocks and trees in rivulets; not frequent. B. Bowshiel dean on stones and about roots of grey willows in the Pease burn; in the Eye from Reston downwards; in the Whitadder from Coppermine downwards. N. Old Middleton burn; in Roddam dean; Common burn, above Watchlaw; Heathpool Linn. R. On the Alwen below Colmslie.

9. *O. DIAPHANUM*, *Schrad.* At the base of old trees and on walls. B. Common in Berwickshire. N. Top of a wall at Whiteside, and on trees and walls near Earl. R. Cherrytrees and near Melrose.

10. *O. LEIOCARPUM*, *Br. and Sch.* On trees, common.

11. *O. PULCHELLUM*, *Smith.* Generally distributed, particularly on hazels, and on willows in moorland bogs. It ascends the Langleyford vale; and I found a fragment on a birch in Dunsdale wood on Cheviot, where *Orthotricha* became scarce. *Dr. Johnston* calls this "the most elegant of the genus" and *Fries* (*Novit. Flor. Suec.* p. 229) admiringly says, "dentibus subreflexis, pulcherrime se commendans;" and this is a good specific character.

12. *O. CRISPUM*, *Hedw.* Frequent on trees and juniper bushes. On mountain ashes in the Bizzle, and Bellyside ravine.

13. *O. BRUCHII*, *Brid.* Growing with the preceding in various deans and woods throughout the district. B. Pease, Dowlaw, and Brockholes deans; on a hazel on Elmford farm. N. In Langlee crag ravine; Dunsdale wood on heather.

14. *O. DRUMMONDII*, *Hook. and Grev.* On trees among the hills. N. "On the trunks of alder below Langleyford."—*Dr. Johnston.* On birches above Langleyford, and in Langlee crag ravine; and on birches in Lyham dean. B. On trees in Penmanshiel wood and Blackburn-rigg dean. Recognized by its creeping shoots.

OBS. *O. Hutehinsiae*, is given in the Addenda to *Winch's Flora*, p. 157, as having been found "on trees at the foot of

Cheviot above Langleyford." There is some mistake here, as the species grows on rocks. I have often sought for it to no purpose. It is, however, the only one of Winch's species not recovered.

15. *O. PHYLLANTHUM*, *Bruch and Schimp.* On rocks near the sea, and about the roots of trees. B. On rocks near Siccar point; and about the roots of ash trees near Oldcambus frequent; also on trees in Dowlaw dean; and in Bilsdean dean, East Lothian, both open to the sea.—Near Eyemouth.—*W. S.* On trees at Brockholes.—*J. A.* R. On an ash tree near Cherrytrees.—*J. B. B.*—On old trees at Hillslap tower on the Alwen.—Sparingly near Melrose.—*A. J.*

31. *Zygodon*, *Hook and Taylor.*

1. *Z. LAPPONICUS*, *Br. and Sch.* In the crevices of moist shady mountain rocks. R. First found in the district by Mr Jerdon and myself on a rocky eminence in a field less than mid-way between Belses station and Minto crags. N. In moist fissures and on sides of rocks on both sides of the Bizzle; and also in Henhole; one specimen in Langlee crag ravine; it occurs plentifully in fruit. Although named *Lapponicus*, Wahlenberg says it is far from common in Lapland; its metropolis being more to the south.

2. *Z. MOUGEOTII*, *Br. and Sch.* Moist shady rocks among the hills, and by the side of upland streams. N. In large protuberant tufts like green moles, on the moist Bizzle and Henhole rocks; Heathpool Linn; Common burn; Care burn rocks; Langlee Crag ravine; Harthope Linn; and on the dripping side of the cliffs below the lower Linhope Linn; Hawise burn near Alwinton. B. Two or three round tufts on some wet shady rocks near Edin's Hold, in company with *Hookeria lucens*.—*J. A.*

3. *Z. VIRIDISSIMUS*, *Bridel.* On dry rocks and trees. N. Heathpool Linn, on rocks; and on trees in Roddam dean. B. Among rocks on the Ale water, and on the Coll burn below Mill dean; and sparingly at Black craig in the Pease dean; also near Lauder castle. R. Among rocks on the Tweed above Old Melrose. On an elm in the Rhymer's Glen.—*A. J.* Messrs. Boyd and Jerdon found it in fruit at St. Mary's Loch.

32. *Tetraphis*, *Hedwig.*

1. *T. PELLUCIDA*, *Hedw.* In shady rocky places, and on decaying trees. N. "Murton crags, plentiful."—*Dr. Johnston.* Very abundant among sandstone rocks in Hebburn wood, in fruit; as also in Lyham dean; among rocks on Old Bewick moor; on Care burn; above Langleyford; in the interior of decayed alders, where Lill burn turns up to Threestone burn. Cawledge Park, near the Lady's well in Alnwick Park, and the top of Simonside hill.—*Mr. Robt. Middlemas.* B. On the trunk of an old tree at the foot of Cockburn Law, below the Retreat.

R. In the woods near Linthaughlee. Ehrhart had a poetical fancy for names; he calls this elegant moss—"Georgia Mnemosynum."

33. *Tetrodontium, Schwægr.*

1. T. BROWNIANUM, *Dicks.* N. "On the under side of a shelving rock in the dean at Twizell House, where it was discovered by Dr. Grevillæ." (Dr. Johnston). On rocks in Lyham dean.—*Messrs. J. and W. B. Boyd.* "In cæspitibus latis, planis, amorphis, rupes umbrosas instar Byssi investit," is the remark of Dr. Robert Brown, its discoverer. Sir J. E. Smith, calls it "Muscus valde paradoxus."

34. *Buxbaumia, Haller.*

1. B. APHYLLA, *Haller.* B. A few specimens found in April, on the earthen cope of a stone wall of one of the Brockholes plantations.—*J. A.* N. In barren places in the Bizzle, in 1867.—*W. B. B.* One of the rarest and most singular of the recent additions to the Flora.

35. *Diphyseium, Weber and Mohr.*

1. D. FOLIOSUM, *Web. and Mohr.* N. On peaty and barren earth in chinks and hollows among the rocks, &c., on both sides of the Bizzle. The foliage of a rusty tinge is common; but I only found fruit on it one year, and that decayed, and not unlike a withered bell-heather blossom. More recently in September, fruit has rewarded Mr John Boyd's research. It is more commonly in fruit near St. Mary's Loch.

36. *Atrichum, Beauv.*

1. A. UNDULATUM, *P. Beauv.* Moist clayey banks in ravines and woods; common. "Frigoris valde impatiens," it shuns the high part of the hills.

37. *Oligotrichum, De Cand.*

1. O. HERCYNICUM, *De Cand.* N. Not unfrequent in a barren state in the Bizzle where the snow rests so long, descending to the junction of the streams; confined to the barren gravelly soil. In the same soil in the higher part of Dunsdale and Bellyside ravine, where it produces capsules; and in Henhole, particularly about the entry; also at the top. A few examples have occurred above Harthope Linn.

38. *Pogonatum, Beauv.*

1. P. NANUM, *Brid.* On earth-capt dikes, and shady crevices in yellow or sandy soil in the higher moors. Among the hills it is found on Hedgehope and Ilderton Dod.

2. P. ALOIDES, *Bridel.* In similar situations. Noticed in the Bizzle.

3. P. URNIGERUM, *Bridel.* On banks, tops of walls, and mossy ground, general. "Cheviot and Hedgehope."—*Winch.* Found both in Bizzle and Henhole. Dr. Johnston marks for a

low situation for it—"not more than a hundred feet above the level of the sea"—the "roadside between Foulden and Hutton mill, plentiful."—*Rev. A. Baird*.

4. *P. ALPINUM*, *Bridel*. Among the higher hills. "On Cheviot."—*J. V. Thompson*, 1807. "Cheviot, Hedgehope, Simon-side, and Alnwick moor."—*Winch*.—In the upper part of the Bizzle, and Bellyside ravine; also in the Henhole, and near the summit of Cheviot. Among the Cunion crags, and on Hedgehope; also among the Careburn rocks. B. Plentiful on the side of the British camp near Preston cleugh.—*J. A.*

39. *Polytrichum*, *Hedw.*

1. *P. FORMOSUM*, *Hedw.* In woods on dry banks, common. B. Dunglass and Penmanshiel woods; quarry at Oldcambus, ravine between Barnside and Elmford, &c. N. On Yeavering Bell, at Heathpool Linn, &c.

OBS. *P. GRACILE* has not yet been detected in the district; most likely overlooked.

2. *P. COMMUNE*, *L.* Common. The "Silver Heather" of the Lammermoors.

3. *P. JUNIPERINUM*, *Hedw.* On the high moors. B. "Near Ord-wheel, &c."—*Dr. Johnston*. Penmanshiel moss, &c. N. In Henhole and on Cheviot, and elsewhere; not frequent.

4. *P. PILIFERUM*, *Schreb.* On wall tops, barren banks, and heath; common.

40. *Aulacomnion*, *Schwægr.*

1. *A. PALUSTRE*, *Schwægr.* Borders of marshes and in peat mosses; common.

2. *A. ANDROGYNUM*, *Schwægr.* In dry stony woods. N. "In Twizell dean."—*Dr. Johnston* in *Winch's* Flora. Along with *Tetraphis pellucida* in Hebburn wood.—*W. B. B. and J. H.*

41. *Leptobryum*, *Wilson.*

1. *L. PYRIFORME*, *Hedw.* N. In the green-house at Hetton Hall, in fine fruit.—*W. B. B.* R. On the brick wall of a garden frame at Cherrytrees.—*J. B. B.*

42. *Bryum*, *Dillenius.*

1. *B. POLYMORPHUM*, *Br. and Sch.* In the fissures and among the hollows of the high rocks of the Bizzle and Henhole; also on Newton Tor; and near Harthope Linn; occasionally in fruit. The bright changeable gloss of the foliage is a guide to the detection of this fine species. Its tufts are more extensive than those of the next.

2. *B. ELONGATUM*, *Dicks.* N. Scattered here and there among the Bizzle rocks, but scarce; producing fruit.

3. *B. CRUDUM*, *Schreb.* In shady fissures and hollows of rocks, and beneath overhanging banks; chiefly in the hills; widely diffused. B. In the dean at Oldcambus; on the Ale water; on the Whitadder at Elmford shepherd's house, and near Hoardweil,

&c. N. Humbleton dean, Careburn rocks and stream; above Langleyford; near Coldgate mill; Heathpool; Newton Tor; frequent in the Henhole and the Bizzle; Roddam dean; ravine above Linhope Linn; above Alwinton. R. In an old quarry near Cherrytrees. Nearly every writer on Muscology praises the beauty of its silken foliage. It is a hardy moss, and is universal in the Lapland Alps.

4. B. NUTANS, *Schreb.* On wet moors, and in peat mosses; frequent. Very abundant on the spongy moors of the Cheviots.

5. B. CARNEUM, *L.* On moist clayey banks, and sides of ditches. B. In the Pease dean, and on the sea-banks near Greenheugh; ditch sides at Oldcambus, and Penmanshiel, and Redheugh; Dunglass dean; ditch at Netherbyres; sea-coast south from Coldingham; old quarry Lintlaw. R. Side of the Teviot.—*A. J.*

6. B. WAHLENBERGII, *Schwægr.* On dripping rocks in deans; and on moist ground where springs issue; “ubi aqua fontana per terram sterilem glareosam diffluit.” (Wahlenb.) B. Pease dean; post road near the west end of Pease bridge; and near Cockburnspath tower; railway bank near Reston. N. In the Bizzle, and on Common and Pebble burns; on Newton Tor; Roddam dean; and below Linhope lower Linn, &c. R. By the Jed near Linthaughlee, and in Denholm dean.

7. B. CALOPHYLLUM, *R. Brown.* This fine moss was found growing on sand banks at Holy Island, by Mr. W. B. Boyd, on the day of the Club's excursion thither. It was first described by Dr. R. Brown in the Supplement to Parry's Voyage, 1819—20 p. cxcvi. It produces fruit in the Arctic regions of America.

8. B. DUVALII, *Voit.* B. In the marshes near Drakemire.—*J. A.* This is one of the coldest and moistest places in the east of Berwickshire. This moss in this country has hitherto been found only in the Scottish Highlands. The Berwickshire specimens agree with others from Ben Lawers, gathered by Mr. Sadler.

9. B. PSEUDO-TRIQUETRUM, *Schwægr.* On wet rocks, rotten swamps on moors, and sides of upland streams; common. In all the Cheviot ravines.

10. B. ALPINUM, *L.* On moist rocks, and plashy spots in the higher hills. N. On rocks on the west side of Careburn, in several places; at Heathpool Linn; moist rocks in Dunsdale, the Bizzle, and Henhole; and by the water side at the foot of Harthope Linn; at Union crags, and on Dunmore; and at the upper and lower Linns at Linhope. B. On the gravelly road crossing the moor at Penmanshiel, near Red Clues cleugh, 720 feet of elevation. This spot is moist in summer, and a sheet of ice in winter, like most of the other situations occupied by it at greater elevations; where though subjected to a greater winter rigour, it is often quite dried up in dry summers. The foliage is of a fine changeable purple and green.

10. *B. PALLENS*, Swartz. Moist places, near springs, and by the sides of upland gravelly and rocky streams; also on the sea-coast. When in fruit, the bright green capsules pendant on long slender stalks set off against the ruddy foliage, and bathed in the spray of the dashing streams, far away among the lonely hills, yield a refreshing glimpse of joy to cheer the way-worn explorer. As John Wilson says, there are "mosses that 'twould be sin to tread upon." Var. *MINUS*; "stem shorter, capsule short-necked ventriclo-ovate." B. On a rock in the Whitadder near Preston bridge.—*J. A.* This var. is sometimes mistaken for *B. turbinatum*.

12. *B. INTERMEDIUM*, Bridel. On a mossy wall near a stream between Oldcambus and Redheugh; and on Ale water. On the face of the sandstone rock at the side of the burn above Billy mill.—*J. A.* Not common.

13. *B. CAPILLARE*, Hedw. On rocks, walls, road-sides, and stumps of trees. This common moss ascends to the highest of the dry rocks among the Cheviots. There, entering into the deep shady fissures of the rocks, it lengthens into wedge-like flexible masses, closely interwoven with rusty rootlets; which, from their extraordinary appearance, raise joyous anticipations of something unseen before having fallen to our lot; but scarcely have we brought it home when the rapidly twisting hair-pointed foliage, as the moisture begins to exhale, dispels our delusion. Then, at the sides of streams, near water-falls, it gets blackened, and the leaves shorten, stiffen, and grow concave, and are so compacted that they are not at liberty to shrivel when dry; here then we have something of the water—a species at least;—but no, it is only *B. capillare* under another disguise.

14. *B. CAESPITIUM*, L. On rocks, and walls, and the lower moors; also on the sea-coast, as at Berwick, Scremerston, and Holy Island. It does not rise high in the Cheviots; on a bridge-top at Yeavering, and on a wall near Langleyford.

15. *B. SANGUINEUM*, Ludwig. B. Growing in loose patches in Buncle wood, but scarce.—*J. A.*

16. *B. ATROPURPUREUM*, Web. and Mohr. B. On a lime cap wall near Penmanshiel growing among *B. argenteum*. N. On the ground mixed with *B. argenteum* and *Tortula unguiculata* near Hetton hall.—*W. B. B.* On a wall top near Earl. R. Cherry-trees.—*J. B. B.*

17. *B. JULACEUM*, Smith. In places constantly moistened at the foot of upland rocks, and by the side of rocky streams, in shady ravines. N. In the Bizzle where the streams meet; Heath-pool Linn; on Common burn, not so far up as the shepherd's house; also among wet rocks on Care burn; and in Langlee crag ravine. Not in fruit.

18. *B. ARGENTEUM*, L. On the ground, walks, road-sides, roofs, wall-tops, &c. This humble moss was found on the plateau of the Neilgherries by Perrottet.

19. *B. ZIERII*, Dicks. In fissures of moist rocks, and the oozy sides of mountain streams; rather frequent in the Bizzle; also in various parts of Henhole. Produces fruit in July. R. Roxburghshire.—*A. J.*

20. *B. ROSEUM*, Schreb. Shady dry banks in woods and among rocks; in numerous localities in the district. Winch found it at "the foot of the Cheviot;" I noticed it in Langlee crag ravine, and at Hazelton Rigg wood. It descends to the seabanks as at Oldcambus; near which I observed a large quantity growing on the fine soil of deserted ant hillocks. This moss was first figured by C. Bauhin.

43. *Mnium*, Br. and Sch.

1. *M. AFFINE*, Bland. In marshes. R. Fairnington bog, and a large patch in a damp wood near Melrose.—*A. J.* In a bog beside Hetton hall.—*W. B. B.*

2. *M. CUSPIDATUM*, Hedw. N. "In a bog near Haiden dean; amongst *Hypna*, but not in fruit."—*Dr Johnston*. "In fructification in woods near Alnwick."—*Mr R. C. Embleton*. (Winch.) On the surface of a broken-down mossy wall, near a pool, by the side of a footpath from the Maiden well to Earl loaning, finely in fruit, April 22, 1867. It has a preference to ruinous walls. A small patch at the side of a wall, on the highest part of Penmanshiel farm, about 750 feet. R. Cherrytrees, but not in fruit.—*J. B. B.*

3. *M. ROSTRATUM*, Schwægr. By the sides of shady rivulets in woods. B. Pease, Dunglass, and the Fleurs deans; and on the Ale water, &c. N. Roddam dean; by the side of the Bizzle burn. It is an Arctic species (R. Brown in Parry's Voyage); in India it grows in the forest region of the Neilgherries.

4. *M. SERRATUM*, Bridel. Margins of rivulets in woods, &c. B. "Langtonlees cleugh."—*Rev. Thos. Brown*—Vicinity of Cockburn Law.—*J. A. N.* Heathpool Linn; Old Middleton burn; and below the water-fall at Langlee crag; Roddam dean; Hetton burn.—*W. B. B.*

5. *M. HORNUM*, L. "Under moist shelving rocks, and on the stumps of old trees, in dense tufts." It particularly garnishes the buttresses of old alders, so conspicuous by their mossy bottoms. From the sea-coast it rises to the summit of the Bizzle, where it fruits freely.

6. *M. UNDULATUM*, Hedw. Moist shady banks, also in woods, and on the sea-banks, and on moors under dwarf willows. A small variety bears fruit in the Bizzle and Henhole. Dr. Johnston records that the Rev. A. Baird found it in fruit near Swinton; and I had found good examples in Sisterpath dean, near Penmanshiel. The warm season of 1868 produced a great crop of capsules. I gathered them in quantity at Heathpool Linn; and Mr. J. B. Boyd found them plentiful at Cherrytrees.

7. *M. STELLARE*, Hedw. Shady rocks and banks. N. In

some abundance at Hetton burn.—*W. B. B.* Among damp rocks, below the lower falls at Linhope. *B.* In dampish clayey spots, on the sea banks behind St. Helen's Church, Oldcambus; where it may indicate lime in the soil. There were some indigo blotches here and there on the tuft.

8. *M. PUNCTATUM*, *Hedw.* In wet shady places by rivulets, well-heads, and in peat bogs. Very abundant in the Bizzle and Henhole. A very luxuriant state floats in mossy water in the boggy ground where the Common burn rises. This may be the var. *aquaticum*, Hook, (*Brit. Flor.* ii. p. 63).

9. *M. SUBGLOBOSUM*, *Br. and Sch.* In marshes and among shady rocks. *N.* In the Bizzle and at the top of Henhole, in fruit, but not common. *B.* Among the boggy ground at Drake-mire.—*J. A.*

44. *Meesia*, *Hedw.*

1. *M. ULIGINOSA*, *Hedw.* *N.* In moist bogs at the edge of Common burn, considerably below the shepherd's cottage, in fruit in July; also half way up the ravine on the east end of Newton Tor.

45. *Amblyodon*, *P. Beauv.*

1. *A. DEALBATUS*, *P. Beauv.* *B.* On moist rocks near Guns-green; and also on a marshy spot on the Ale water near the Tile work, sparingly.—*W. S.* This connects us with the Edinburgh Flora, see "*Flora Edinensis*," p. 266.

46. *Funaria*, *Schrel.*

1. *F. HYGROMETRICA*, *Hedw.* On garden walks, ground that has been burnt over, and especially on moor land recently limed. It also occurs on moist spots in many of our deans; and we find it in the very heart of the Bizzle, more slender and prettier than usual. Dr. Hooker found it in the Himalayas at about 4000 feet high, where occurs a singular intermixture of European with tropical plants. (*Himalayan Journals*, II., p. 44). It is also a moss of the Neilgherries; having like some other mosses an almost cosmopolitan range.

47. *Physcomitrium*, *Bridel.*

1. *P. ERICETORUM*, *De Notaris.* By sides of wet ditches, and bare moist places on boggy heaths. *B.* "*Langtonlees Cleugh*" —*Rev. Thomas Brown.* Sides of foot-drains on Penmanshiel and Oldcambus moors; burnside between Ellemford and Barnside farms, in Lammermoor. *N.* Burnside and foot-drains near Dunsdale; in the Bizzle and Henhole; abundant near Linhope spout; Old Bewick moor. *R.* Near Cherrytrees, and Jedburgh.

2. *P. PYRIFORME*, *Br. and Sch.* Sides of ditches and rivulets and soil of dried up pools; rather local; not seen in the hills. Mr. Boyd found it growing in his green-house at Hetton Hall.

48. *Bartramia*, *Hedw.*

1. *B. FONTANA*, *Bridel.* In spongy bogs, indicative of spring water; frequent.

2. *B. CALCAREA*, *Br. and Sch.* Wet places, not common. N. In Hebburn wood. B. Ewehole on shelves of rocks in company with *Hyp. commutatum*, and *Weissia verticillata*.—*J. A.* This was first discovered as a British moss, in Teesdale, by Mr Spruce, see "Ann. and Nag. Nat. Hist." XIII., p. 192, 198. Mr. Wilson says that it chiefly occurs in limestone districts.

3. *B. POMIFORMIS*, *Hedw.* Among shady rocks in deans, and in the higher hills; general.

4. *B. ITHYPHYLLA*, *Bridel.* In similar places with the preceding, but much less frequent. N. "On Cheviot."—*Bot. G. through N. and D.* Humbleton dean and Care burn rocks; Heathpool Linn; in the Bizzle and Henhole; Roddam dean. B. In the dean between Horsley and Brockholes; and on walls there. Allanton; west side of Cockburn law. Also in Roxburghshire.—"*Folia semper stricta manent, et viridia.*"—(Wahlenb. Flor. Upsal.)

5. *B. ARCUATA*, *Bridel.* On wet moors and rocks, somewhat local. B. "Coldingham moor."—*Rev. A. Baird.*—"Lamberton moor."—*Dr Johnston.* On Coldingham moor near Crosslaw, and Buskin burn.—Drakemire moor near the Dunse road.—*J. A.* N. In woods at the foot of Cheviot and Hedgehope."—*Winch.* Not observed there since. Near a water fall, among moist rocks on the west side of Care burn. Frequent in the Bizzle; and also in Henhole, where, on the moist rocks at the upper end, it acquires a very lurid tint. R. More common on the wet Roxburghshire moors, such as those between Ruberslaw and Wells; north of the Eildons; also on Kippielaw moors.

49. *Splachnum*, *Br. and Sch.*

1. *S. AMPULLACEUM*, *R.* In wet bogs, growing on the dung of cattle. B. In bogs on the moor near Penmanshiel; and also on the Redheugh portion of Coldingham moor.—"One of the most beautiful and curious of British mosses."—(*W. Wilson.*) Scopoli (Flor. Carn. II., 308), thus aptly describes the capsule: "*Capsula figuram habet ampullæ vitreæ (Caraffe); collo longitudine ventris.*"

2. *S. SPHÆRICUM*, *Hedw.* N. "On Cheviot."—*Winch.* I have only observed it there in the bog at the south-eastern end, but not recently.

50. *Tetraplodon*, *Br. and Sch.*

1. *T. MNIOIDES*, *Br. and Sch.* B. On the moor near Winden cairn, Penmanshiel, accompanied by *Didymodon purpureum*, and *Bryum nutans*, on a mixture of sheep and cow-dung, lying in a hollow from which a large stone had been dug out. I raised a large crop of specimens here for a year or two.—On the remains of a decayed rabbit near Drakemire.—*J. A.* N. Somewhat frequent on the ridge of the hill between Bizzle and Dunsdale, near a large collection of stones; also in a fissure of rock on Dunsdale

cairn ; among black peaty rifts on the ridge that connects Hedgehope with Cheviot ; one of the dreariest and most barren spots on those hills.

51. *Ēdipodium*, *Schwægr.*

1. *Ē. GRIFFITHIANUM*, *Schwægr.* N. In the crevices of rocks, and on small pieces of moist clay overhanging rocks, in similar situations as *Rhabdoweissia fugax* ; at various points in the Bizzle ; and also at the N.W. end and top of Henhole. Like most of the other plants recorded for the Cheviots it is new to the Border Flora. Norway is said to be the only country in Europe, besides our own, where it is to be found. (Berkeley). It is named after J. Wynne Griffith, Esq., of Garn, in Wales, who contributed numerous original observations on British plants to Dr. Withering's "Arrangement," and also to the "Flora Britannica ;" a well-deserved compliment to one now little known, except in works, now seldom consulted.

52. *Fissidens*, *Hedw.*

1. *F. VIRIDULUS*, *L. R.* In a clayey bank near Melrose, under the shade of trees.—*A. J.* Var. *INCURVUS*, *Schwægr.* Growing with *Phascum cuspidatum* near Cherrytrees.—*W. B. B.*

2. *F. BRYOIDES*, *Hedw.* In shady banks, sides of path-ways in woods, and on the sea-banks ; common. Anyone who reflects how impatient this moss is of drought, will have doubts, whether Mungo Park in the African desert had not mistaken his plant. *F. BRYOIDES*, there, was a greater marvel than a white man.

3. *F. OSMUNDIODES*, *Hedw.* N. On wet hollows of rocks and swampy ground in Bizzle and Henhole.

4. *F. ASPLENIODES*, *Swartz.* In bogs and on dripping rocks ; from the sea-side to the summit of the Bizzle. It is very luxuriant in the Cheviot ravines.

5. *F. TAXIFOLIUS*, *Hedw.* On shady moist clayey banks.

53. *Leucodon*, *Schwægr.*

1. *L. SCIUROIDES*, *Schwægr.* On trees and rocks. N. "Above Langleyford, at the foot of Cheviot."—*Winch.* Not re-found there. On rocks in Henhole.—*J. B. B.* R. On a tree, banks of the Jed, and on an ash tree near Melrose.—*A. J.* On ash trees and stone walls at Cherrytrees.—*J. B. B.* B. On rocks in the bed of the Ale.—On trees in Ayton woods.—*W. S.* On trees near Lauder.—*Mr. Kelly.* Scopoli remarks that the shoot of this plant more resembles a fox's than a squirrel's tail.

54. *Antitrichia*, *Bridel.*

1. *A. CURTIPENDULA*, *Bridel.* On walls, rocks, and trees ; not very common. On a wall top near Penmanshiel, and on a tree in Penmanshiel wood ; on a thorn by the roadside above Abbey park, Coldingham ; and in a similar situation on a tree trunk on the hill above Hillend ; on the trunk of an ash in Dunglass wood ; on a wall by the Lauder road between Sorrowlessfield and

Earlston, &c. N. In the Bizzle. On a mountain-ash near Hart-hope Linn. This tree is remarkable as being the only one on which I ever saw the leaves puckered by *Psylla Sorbi*; on its decayed trunk is also found the rare lichen *Megalospora sanguinaria*. In Keller's "Lake Dwellings," it is recorded that one of the mosses used by the pre-historic Helvetians for stopping the holes in the walls of their huts, and also for bedding was this species, pp. 342, 350. It is somewhat remarkable that, although a scarce moss with us, I found it over-running a British hut behind Humbleheugh. There is a long winding band of it, from bottom to top of a fissure, on the N.W. side of House of Crag. Hazelton rigg wood, on an elm. On an ash tree, Hetton hall.—*W. B. B.* R. On trees and walls, Cherrytrees.—*J. B. B.* On the Dunion, sparingly.—*A. J.*

55, *Anomodon*, *Hook and Taylor*.

1. *A. VITICULOSUS*, *H. and T.* On dry, shady, wooded rocks. B. "Banks of the Eye, between Ayton house and Netherbyres."—*Rev. A. Baird.* Banks of Ale water. "Pease dean, in fruit."—*Rev. A. Baird.* It occurs at the bridge, but more frequently by the burn side, a little farther up. N. "On rocks in Humbleton dean, above Wooler."—*Dr. Johnston* in Winch's Flora. It is there still, but not in quantity. Roddam dean. R. In a wood near Jedburgh.—*A. J.* On rocks by the Tweed, between Ravenswood and Old Melrose.

56. *Pterogonium*, *Swartz*.

1. *P. FILIFORME*, *Hedw.* N. Heathpool Linn on damp rocks, on the south side of the water-fall; while *P. gracile* is almost confined to the northern or drier side.

2. *P. GRACILE*, *Swartz.* B. On rocks in the dean near St. Helen's Church, Oldcambus, most apparent in winter, while water trickles over it. Near Ayton.—*W. S.* N. On rocks, and also on a tree on the north bank of the College at Heathpool Linn. R. On the Dunion sparingly.—*A. J.*

57. *Isotheceium*, *Bridel*.

1. *I. MYURUM*, *Dill.* On trees and rocks; common. Not unfrequent in the Bizzle and Henhole.

2. *I. MYOSUROIDES*, *Dill.* On trees and on rocks; on the sea-banks; as well as on Cheviot, on the Bizzle rocks.

3. *I. ALOPECURUM*, *Dill.* On rocks near waterfalls, or at the sides of obstreperous, dashing burns, in dark, woody dells; common. It occurs at Harthope and Linhope Linn.

58. *Climacium*, *Web. and Mohr*.

1. *C. DENDROIDES*, *W. and M.* On wet bogs, from the sea-coast to the Cheviot moors. Some of the most luxuriant examples I ever saw, grow among the mosses where the Common burn rises. According to Humboldt there is a considerable proportion of calcareous earth in this moss, and *Hyp. Crista-castrensis*. (*Sprenkel's Introd.*, p. 14.)

59. *Leskea*, *Hedw.*

1. *L. LATEBRICOLA*, *Wilson*. B. I picked out some fragments of this minute moss among some tufts of *Bryum crudum* and *B. pallens*, gathered near Buskin burn, on Coldingham moor. They correspond in form and texture with the true plant.

2. *L. POLYANTHA*, *Hedw.* N. "In the dean above Twizell Castle."—*Rev. A. Baird*. B. On a willow where *Cryphæa heteromalla* grows in woods near the Ale, also elsewhere in the Ayton woods.—*W. S.*

3. *L. SERICEA*, *Dill. L.* On dry rocks, walls, and trunks of trees; common. It ascends to the Bizzle.

60. *Hypnum*, *Dill.*

1. *H. NITENS*, *Dill.* In moist sphagnum bogs; not frequent. N. "Haiden dean."—*Dr. Johnston*. On a piece of mossy ground near Hetton Hall. B. In the bogs on the moor near Penmanshiel, and near Dowlaw moss; in a bog on the height where the farms of Elmford and Barnside march, in the Lammermoors.—*Drakemire bog*.—*J. A.* R. Near Jedburgh.—*A. J.*

2. *H. ALBICANS*, *Dill.* On thin soil among rocks, on wall-tops, and on sandy links by the sea-coast; not unfrequent, and generally distributed. Not seen among the hills.

3. *H. LUTESCENS*, *Dill.* On open banks somewhat moist, base of stone walls; and especially on the sea-banks on a sandstone soil; generally distributed. A small state of it found in Bellyside ravine, on Cheviot.

4. *H. PLUMOSUM*, *Swartz*. Rocks liable to be overflowed at the sides of streams; common. It occurs both in Henhole and the Bizzle. A form of it, with striated, or rather fluted upright foliage, might be taken for *H. salebrosum*; but the structure of the leaf does not differ from the ordinary form.

5. *H. POPULEUM*, *Swartz*. On walls and rocks, and occasionally on trees; common. It ascends to the Bizzle.

6. *H. VELUTINUM*, *Dill.* On walls, stones, and trees; common. I have found a dipterous green prickly larva, supposed to be Tipulidan, in spring feeding on the foliage of this and other tree Hypna; I could not rear it.

7. *H. RUTABULUM*, *Dill.* On banks, in grass-fields, on walls, and tree stumps; frequent.

8. *H. RIVULARE*, *Bruch.* On stones by rivulets, and often growing in water; chiefly in the upland streams. N. Among rocks on Care burn, and on Common burn; Humbleton dean; Heathpool Linn; Harthope Linn; ascends the Bizzle and Henhole burns, to the swampy bogs on Cheviot, where it grows in compact masses, of a deeper green; also in the springs on the side of Cheviot opposite Hedgehope, far up the hill. In a pond near the Maiden well; and in fruit in a bog near Hetton Hall. R. Sides of the Roxburghshire streams.—*A. J.* B. In drains at Drakemire, and on the Whitadder.—*J. A.*

9. *H. CRASSINERVIVM*, *Taylor*. R. On a stone by the side of the Oxnam.—*A. J.*

10. *H. PILIFERUM*, *Vaill.* Shady woods and banks. B. "Langtonlees Cleugh."—*Rev. T. Brown*. Sisterpath dean, in Penmanshiel wood; sea-banks behind St. Helen's Church, Oldcambus; Ayton woods, &c. R. Near Jedburgh.—*A. J.* Cherry-trees.—*J. B. B.*

11. *H. PRÆLONGUM*, *Dill.* On rocks, hollows of shady banks, and over-running decayed trees in woods, &c.; frequent. A small variety is common in barren fields; and a lurid variety is found in peat mosses beneath dwarf willows; and there are other forms that almost look like species.

12. *H. SWARTZII*, *Turner*. B. In a dried-up ditch on Green-side hill, near Oldcambus. N. In the Bizzle.—Hetton burn.—*W. B. B.* R. Cherrytrees.—*J. B. B.* Near Melrose.—*A. J.*

13. *H. SPECIOSUM*, *Bridel*. N. In Lyham dean.—*W. B. B.* B. I find a fragment among other mosses gathered on the Ale, where it will have to be looked for again.

14. *H. PUMILUM*, *Wilson*. R. On a tree-stump near Jedburgh.—*A. J.* N. On clayey soil in the Bizzle, near the stream-side. It appears to be scarce, as I have only one specimen.

15. *H. STRIATUM*, *Hedw.* Shady ravines in woods, banks, and bases of walls; common. Found in both the Bizzle and Henhole.

16. *H. RUSCIFOLIUM*, *Dill.* In shallow, stony, and rocky streams, common; and by river-sides.

17. *H. CONFERTUM*, *Dicks.* On stones, walls, &c.; trunks of trees; common.

18. *H. MURALE*, *Dicks.* B. "Langton wood."—*Rev. T. Brown*. On a sand-stone in the dean behind St. Helen's Church, Oldcambus. R. Near Jedburgh.—*A. J.* Sprengel reckons this as one of the mosses that will grow on pure quartz.

19. *H. TENELLUM*, *Dicks.* On rocks, not common. B. Rocks on the sea-banks between Rammel and Dowlaw; the rocks are greywacke, but the waters issuing from them deposit lime. Among wet shady rocks on the Ale.—*W. S.* These rocks likewise contain lime; and it is thus that this and other *calcareous* mosses find a habitat where no limestone presents itself.

20. *H. ATROVIRENS*, *Dicks.* R. On a dry stone wall near Cherrytrees. This remarkable discovery of a moss, hitherto considered exclusively a native of the Scottish Highlands, in a position so low down, was made by John B. Boyd, Esq. The specimens vary somewhat in appearance from examples from Ben Lawers; but, on being submitted to Mr. Wilson, he could trace no essential difference.

21. *H. ELODES*, *Spruce*. B. Growing at the edge of a stone in a wet bog in Penmanshiel moor.

22. *H. SERPENS*, *Dill.* Moist banks, decayed logs, moist

stones, &c.; common. Var. *TENUE*; on dripping rocks on the sea-coast near Berwick, and at Siccar point.

23. *H. RADICALE*, *Pal. Beauv.* N. In the Bizzle, one example only.—*W. B. B.* R. Cherrytrees.—*J. B. B.*

24. *H. POLYGAMUM*, *Bryol. Europ.* B. Lintlaw-burn, on wet, sandy ground near the burn side.—*J. A.* Near Eyemouth.—*W. S.* Near Lauder.—*Mr Kelly.* R. On an old mossy wall near Melrose.—*A. J.* It has been found on walls in Fifeshire.

25. *H. STELLATUM*, *Dill.* In bogs and wet ground, frequent. Occurs in Henhole and the Bizzle. A small variety is frequent on the sea-banks in moist places, where water charged with lime, trickles down; seen also inland where tufaceous rocks are formed.

26. *H. CHRYSOPHYLLUM*, *Bridel.* R. In a grass field on a clayey soil near St. Boswell's Station.—*A. J.*

27. *H. HETEROPTERUM*, *Bruch.* Moist shady rocks by the sides of sparkling mountain streams, and by waterfalls. N. By the side of the Bizzle burn, on Cheviot; and also in the Henhole, and Bellyside ravine; ravine on Newton Tor; among the Care burn rocks; by the side of Wooler water below Langleyford-hope; in the ravine below Linhope Linn.

28. *H. PALUSTRE*, *Dill.* On moist stones by the sides of upland rivulets; not very frequent.

29. *H. STRAMINEUM*, *Dicks.* In peat mosses and well-heads on the hills. B. "Chooselea, in the parish of Langton, in fine fruit."—*Rev. T. Brown.* Abundant in Penmanshiel moss; Drakemire bog.—*J. A.* R. Rutherford bog.—*A. J.* N. In many of the shady swamps and foot-drains on Cheviot, and also in the ravines; near the Care burn rocks, &c.

30. *H. CORDIFOLIUM*, *Swartz.* Swamps and ditches. B. "Langton woods."—*Rev. T. Brown.* "In the bog on Birgham moor."—*Dr. Johnston.* In bogs on Penmanshiel moor, &c. Among rushes near Chirnside mill, and near Drakemire.—*J. A.* R. Near Jedburgh.—*A. J.* Cherrytrees.—*J. B. B.* This was found in the American Arctic regions in one of Parry's Voyages.

31. *H. CUSPIDATUM*, *Dill.* In grassy, marshy places; frequent.

32. *H. SCHREBERI*, *Dill.* In moist woods and banks, and among heather on moors. In fruit in the Bizzle, and also at Drakemire.

33. *H. PURUM*, *Dill.* On shady banks; common on the sea-banks. Occasionally in fruit.

34. *H. TAMARISCINUM*, *Hedw.* In ravines in woods, and on shady banks, frequent; occasionally in fruit. Occurs in the Bizzle.

35. *H. SPLENDENS*, *Dill.* On shady banks in woods, and below heather, and juniper bushes on the moors; sometimes in fruit. Grows in the Bizzle.

36. *H. FLAGELLARE*, *Dicks.* N. At the under end of the ravine below the lower Linhope Linn.

37. *H. TRIQUETRUM*, *Dill.* On the ground on banks in woods; also on the sea-banks; in the Bizzle, with the next in hollows, where the snow lies till May.

38. *H. LOREUM*, *Dill.* In wooded banks; and among long heather on moors; not so unfrequent in fruit as is supposed. Grows both in Bizzle and Henhole.

39. *H. SQUARROSUM*, *Dill.* On banks and woods. Often in very wet places, as on the eastern branch of the Bizzle burn, where it ascends high up, and is constantly immersed in icy water in winter.

40. *H. FLUITANS*, *Dill.* In swamp and stagnant pools, chiefly on the higher moors. B. "On the Lammermoors."—*Dr. Johnston.* In peat mosses and pools in Coldingham moor, in various places. N. Haiden dean; top of Whiteside hill; in the pools near the pole on the summit of Cheviot; near Harthope Linn.

41. *H. REVOLVENS*, *Swartz.* In moist places and pools in the upland peaty moors. On Penmanshiel moor; and other places on Coldingham moors; also on Lamberton and Drakemire moors. N. In Henhole, the Bizzle, and Dunsdale; also on the south-east end of Cheviot. Sometimes in fruit, as in the Bizzle.

42. *H. ADUNCUM*, *Dill.* In well-heads and swampy bogs; general. On Cheviot, gathered in Dunsdale. Mr. Wilson, I believe, considers true *H. aduncum* as not found in Britain. However this may be, this is the moss usually considered as the species.

43. *H. EXANNULATUM*, *Gumb.* R. Ditch in a moor between Jedburgh and Timpendean.—*A. J.* The specimens were examined by Mr. Wilson.

44. *H. FILICINUM*, *Dill.* On dripping rocks and wet places where water yields a calcareous deposit; frequent. It ascends to the Bizzle. On the sea-banks it soon fills up the little pools of water dug to supply the sheep—"muscosi fontes." The name is C. Bauhin's (Ray's Hist., Plant I., p. 123).

45. *H. COMMUTATUM*, *Dill.* On dripping rocks, and on moist places where water charged with lime filters; on the sea-banks, and in most of our inland ravines; and also on the moors; where the Var. *CONDENSATUM* grows; as it also does on the Cheviots; ascending to the Bizzle, where it produces fruit, as it sometimes does much lower down.

46. *H. UNCINATUM*, *Hall.* Damp walls and rocks in upland districts; not uncommon. B. "At the road side above Greenlaw; plentiful."—*Dr. Johnston.* Near Penmanshiel, and in Bowshiel dean, &c. N. "Near Alnwick."—*Mr. Embleton.* Homilheugh, and above Langleyford. R. Near Jedburgh.—*A. J.* Very common at Cherrytrees.—*J. B. B.*

47. *H. CRISTA-CASTRENSIS*, *L.* Shady woods in upland districts;

not common. R. Wood near Jedburgh; and in a wood on the hill top between Gattonside and Sorrowlessfield.—*A. J. B.* In Blackhouse dean, and a patch in the Dogbush plantations above Marigold.—*J. A.*

48. *H. MOLLUSCUM*, *Dill.* On moist clayey banks, and in bogs on moors; from the sea-coast to the Cheviot ravines; in the Bizzle with purple tips to the branches.

49. *H. CUPRESSIFORME*, *Dill.* On the ground, trunks of trees, stone walls, and rocks; very common and variable. Var. *BREVISETUM* grows in the Bizzle; its branches tipped with purplish brown. Var. *LACUNOSUM*, at the base of a stone wall near Penmanshiel. C. Bauhin first named the species.

50. *H. RESUPINATUM*, *Wilson.* On walls, trees, and dry rocks; not uncommon; from the sea-coast to the Bizzle rocks.

51. *H. ARCUATUM*, *Lindberg.* (*H. pratense*, Var. *b.* Wilson, Bryolog. Brit. *H. Lindbergii*, Mitten). B. A specimen was gathered by W. Shaw, somewhere near Eyemouth, but the locality is not marked. Mr Wilson remarks on this example—"The true *H. pratense* of Koch does not seem different, and has not yet been found in Britain." Lindberg has found *H. arcuatum* in fruit, in Sweden, but it is barren with us.

52. *H. OCHRACEUM*, *Turner.* N. On rocks and stones in the Cheviot rivulets, particularly near waterfalls; first detected in Henhole, by Mr Jerdon. It occurs in fruit in the Bizzle; and is found also in the Pebble or Diamond burn; in Wooler water, above Langleyford, and on Hedgehope.

53. *H. SCORPIOIDES*, *Dill.* Moist rotten spots on upland moors. B. "Lamberton and Coldingham moors."—*Dr. Johnston.* I once found the fruit rising on a plant, gathered on Penmanshiel moor. Moor above Drakemire, &c. N. On the Cheviots. R. Near Jedburgh.

54. *H. PULCHELLUM*, *Dicks.* In the crevices of shady moist mountain rocks. N. Not unfrequent both in Bizzle and Henhole. In Henhole the fruit is sometimes found in the centre of cushions of *Zygodon Mougeotii*; and I observed the same circumstance at Heathpool Linn, where this Hypnum sparingly occurs. Among the Care burn rocks, and at Harthope Linn.—In Lyham dean.—*W. B. B.* B. Near Eden's hold, Cockburn-law, on the rotted bark of tree roots over which the water trickles in wet weather.—*J. A.* A small patch in the moist fissures of rocks near Siccar point. Mr. Wilson remarks on the examples from Siccar point, which are very dwarf. "The 'folia secunda, subfalcata, late lanceolata tenuique acuminata,' are evident enough here; usually the moss has 'folia complanata,' and then becomes *H. nitidulum* of Wahlenberg (*Plagiothecium nitidulum*, Bryol. Eur.) but neither I nor Lindberg think it distinct." It is somewhat remarkable to find it so near the sea, growing in close proximity to mosses hitherto reckoned peculiarly southern, viz.—*Trichostomum*

mutabile, *T. crispum*, and *T. flavovirescens*; as well as *Pottia crinita*, *Desmatodon nervosus*, and *Grimmia maritima*.

55. *H. UNDULATUM*, *Dill.* Upland woods and dry heaths; common. It grows on several places on Cheviot, as at the top of the Bizzle. "*Muscus formosus—valde conspicuus.*"—*Sir J. E. Smith.*

56. *H. DENTICULATUM*, *Dill.* On stones, roots of trees, shady banks, and on the ground in dark woods; common. Abundant in crevices of rocks in Henhole and the Bizzle. A broad-leaved, upright, dark green, mountain variety grows in clear water in the higher hollows of the Cheviots; which in the structure of its leaves resembles *H. sylvaticum*; for which, according to Mr. Wilson, it has often been mistaken.

57. *H. ELEGANS*, *Hooker.* On shady banks at the roots of trees, and in crevices of rocks. N. Above Langleyford, and in Hepburn wood; a very dwarf form in the Bizzle, near the burn. B. On tree roots in the wood betwixt Drakemire and Brockholes.—*J. A.* Near Abbey St. Bathans.—*J. B. B.*

58. *H. MULCENS*, *Wils. MSS.* This is a larger moss than *H. elegans*, which it resembles in its shining foliage: the nervation is variable. Mr. Wilson, considers it as apparently distinct, and intermediate between *H. elegans* and *H. depressum*. In its growth it is similar to *H. denticulatum*, but will be known from it at once by its slenderness. I may be better able to trace its peculiarities, after a further search for more examples. Gathered in July, 1867, in a shady hollow at the base of a rock on the west side of Henhole, not far from the entrance to the ravine.

61. *Omalia*, *Bridel.*

1. *O. TRICHOMANOIDES*, *Dill.* Among dry rocks and on trunks of trees. R. Near Jedburgh.—*A. J. B.* In the dean between Brockholes and Horsley.—Near Allanton.—*Mr. Kelly.* N. Hetton burn.—*W. B. B.*

62. *Neckera*, *Hedw.*

1. *N. COMPLANATA*, *L.* On trunks of trees, and dry rocks. It is not uncommon on the high sea-banks; and rises to the Bizzle and Henhole.

2. *N. CRISPA*, *Dill.* Among dry rocks, which are moist in winter, not common. N. "At the foot of Cheviot."—*Winch.* Not re-found there. Among rocks on the north side of the Bizzle, in one spot; also in Henhole. B. Mr. Jerdon found it on the sea-bank among rocks, at Earnsheugh, where the water of Coldingham Loch runs to the sea, on the eastern side. I have visited the spot since, and found it in considerable quantity. *Arenaria verna* was growing amongst it.

63. *Hookeria*, *Smith.*

1. *H. LUCENS*, *Dill.* Moist banks, burnsides, and moss-pits, and amongst moist mountain rocks; generally distributed. N.

"Longridge dean."—*Rev. A. Baird* "On shelving rocks at Hudshead."—*Dr. Johnston*. In dark crevices of the lower Bizzle rocks, and also near the top; in Henhole; near Linhope lower fall; very fine below long heather on Common burn; Heathpool Linn, and elsewhere on the hills; moors near Kyle. B. "Boggy places on Dirrington, and in Langtonlees Cleugh, abundant." *Rev. T. Brown*. "Dunglass dean, abundant."—*Rev. A. Baird*. Sisterpath dean, in Penmanshiel wood; in great masses on burn-sides on Penmanshiel moor, and overhanging like a curtain, the dark sides of moss-hags in Penmanshiel moss. R. Near Jedburgh.—*A. J.* "*Folia rore veluti crystallino lucida.*" (*Scopoli*.)

64. *Cryphæa*, *Mohr*.

1. *C. HETEROMALLA*, *Dill*. On trunks of trees in sheltered situations; rare. [On an elm near the road walk, Dunglass pond, East Lothian.—*Mr. A. Blake*]. B. On trees in Ayton woods.—*W. S.* On crab-trees in an old hedge at Sligh-houses, in fruit.—*J. A.* It appears to prefer policies and orchards, and may follow cultivation.

65. *Fontinalis*, *Dillenius*.

1. *F. ANTIPYRETICA*, *L.* In rivulets and stagnant pools, on moors and upland districts. Among the Cheviots it grows in the pools, whence the Common burn originates, and in Dunsdale burn, &c.

2. *F. SQUAMOSA*, *L. N.* "In Wooler water."—*Winch*.—Hen-hole.—*A. J.* It is questionable whether this is not a narrow-leaved alpine form of *F. antipyretica*; but specimens gathered long since on Hedgehope have been lost.

ADDENDA.

Under *SPHAGNUM RUBELLUM*, I have said that it was the only other British species to be added. Now, however, I learn that the native *Sphagna* have been augmented by other nine species.

GRIMMIA CONTORTA, *Wahlenb.* In turning over some mosses, I find an example gathered in the Bizzle, April 29th, 1867, with three perfect capsules attached. It might readily be passed for *Cynodontium Bruntoni* or *Weissia cirrhata*.

Tortula, *Schreb.*

15. *T. MARITIMA*, *Nov. Sp.* With the habit and appearance of *T. subulata*; growing in small close tufts; leaves erecto-patent, broadly oblong-lanceolate, acuminate, nerve excurrent in a short mucro, sometimes denticulate before the apex; margin plane; darker coloured, and of a looser texture, and more pellucid than in *T. subulata*; paler at the point; when not succulent, less crispate when dried, and more upright than in *T. subulata*; fruit-stalks numerous, short, pale; capsule short, almost ovate, erect, or slightly bent, the lid as long as the capsule; calyptra silky yellow, brown at the top, closely resembling that of *T. subulata*.

When old and withered, the capsules are stout and broad like those of a *Bryum*; the lid sometimes persistent.

Under *T. subulata* I have alluded to a supposed preference it had to the sea-side; but on examining those examples, I find the leaves have quite a different structure from those of that species. I have not yet got perfect capsules; a few autumnal ones did not survive the conveyance home; and the rising crop while I write, in March, is only partially swelled out; and from the places where it grows being within the reach of stream-sides and the drifting foam, it is doubtful if they attain maturity. At least in past seasons they have always been blasted. This moss has been seen by Mr. Wilson, and it is new to him.

Hab. On moist clayey soil close on the borders of the sea, at Siccar point, and a little further to the north beneath high shady rocks; the soil being of red sandstone origin, while the rock beneath is greywacke. Its accompaniments are *Desmatodon nervosus*, *Pottia crinita*, *Trichostomum flavo-virescens*, and *T. crispulum*,—species peculiarly littoral.

16. *T. RIGIDA*, *Schultz.* N. On a clay wall near Belford.—*W. B. B.*

17. *T. AMBIGUA*, *Br. and Sch.* B. On clayey soil on the sea-banks behind St. Helen's Church. The Greenheugh *T. aloides* belongs here; the capsule which furnishes the distinction ripens in February and March.

Trichostomum crispulum, *T. mutabile*, and *T. flavo-virescens*. N. On the sea-coast at Dunstanborough Castle.—*W. B. B.*

The foregoing list contains the occasional investigations of my friends and myself among the Border Mosses for the three by-past years. The localities are entered in the order of the date at which the species occurred; and the several districts marked B., N., R., represent Berwickshire, Northumberland (inclusive of North Durham), and Roxburghshire, respectively. The initials of the contributors are those of Messrs. J. and W. B. Boyd, and A. Jerdon; and of our correspondents, Messrs. W. Shaw and J. Anderson. The order of arrangement is that of Mr. Wilson's "Bryologia Britannica;" the only satisfactory work on British Mosses. The number of species in the present Flora is 267; but several parts of the Borders, which are likely to furnish special diversities, especially the south of Roxburgh, have not been visited yet; and there are a few generally distributed species that have not put up their appearance. It was not expected that any additions would be made either to the British Flora, or to science in general; but so it has come out in the end. The newly-recorded species are *Dicranum elongatum*, *Dicranodontium aristatum*, and *Grimmia contorta*; those proposed for new are *Campylopus paradoxus*, *Hypnum mulcens*, and *Tortula maritima*. If we compare the present list with former ones, or with other Floras, a better idea will be formed of the acquisitions now gained. Dr. Johnston's

"Flora of the Eastern Borders," contains 154 species; Winch's "Flora of Northumberland and Durham," 193; Greville's "Flora Edinensis," 169; Howie's Fifeshire Mosses ("Phytologist"), 190; Gardiner's "Flora of Forfarshire," 246; Baker's "North Yorkshire," 309; "Bryologia Britannica," 448. The contributions of recent years, more particularly those of the naturalists of the West of Scotland, have raised the British Moss-Flora to about 500 species; still the Border Counties occupy a high rank, if we take into consideration the limited area, and the uniformity of its features. Mosses appear to indicate the differences of the climate with sharper lineaments, than the phænogamous plants. The marked contrasts of cold and moisture, dryness and warmth side by side, is the fact they reveal; of which the evidences are the curious intermixture of northern and southern forms; and the occurrence of the species of the south of England on the coast, and of the natives of the Highlands and Wales, in the marshes, and among the higher hills. The Lichen Flora had prepared us for this result; that although the zephyrs fan the valley into verdure, a raw icy air dominates the hill-top, but yet not so unmitigated, but that in the sheltered recesses the Mosses of the lower country and of the mountains sociably combine; while sporadic alpine Mosses are scattered like emigrants over the campaign, far from their arctic home; and the high storm-beat sea-coasts attract wanderers from the hills to associate with those that drink the salt spray; or some of these latter, on the other hand, penetrate far inland; and thus like the curlew find equally a dwelling on the chilly waste, as by the melancholy shore. With us the mountain limestone performs a very insignificant part, as influencing the distribution of Mosses, in comparison with the chalk and oolite elsewhere. Lime permeates more or less the whole of our Border rocks, and I cannot point out any Moss as peculiar to one rock rather than another. The red sandstone appears to have a more varied Flora, than the greywacke; but they so overlap, that no definite conclusion can be reached. In Cheviot, the porphyries enjoy a monopoly of some species; but this is probably owing to there being no other rock to compete with it, within sub-alpine limits; and had there been substituted a more crumbling and soil-forming rock, it would not only have yielded the present denizens, but have enlarged their amount. Owing to this, and the general dryness and bareness of the Border hills, we can never expect to snatch the palm from Yorkshire or the Highlands.

Rain Fall at Glanton Pyke, Northumberland, in 1868 ; communicated by FREDERICK J. W. COLLINGWOOD, Esq. : And at Lilburn Tower, Northumberland ; communicated by EDWARD J. COLLINGWOOD, Esq.

GLANTON PYKE.		Inches.
January . .	3.24	
February . .	2.06	
March . .	1.435	
April . .	3.72	
May . .	0.925	
June . .	0.59	
July . .	0.68	
August . .	4.09	
September . .	4.27	
October . .	1.91	
November . .	2.995	
December . .	4.22	

Total . 30.135

Rain Gauge—Diameter of Funnel, 8 inches ; Height of Top above Ground, 4 feet $3\frac{1}{2}$ in. ; Above Sea Level, 534 ft.

LILBURN TOWER.		Inches.
January . .	3.019	
February . .	1.202	
March . .	1.129	
April . .	2.847	
May . .	1.351	
June . .	0.509	
July . .	0.583	
August . .	3.611	
September . .	3.760	
October . .	1.565	
November . .	3.325	
December . .	4.543	

Total . 27.444

Rain Gauge—Diameter of Funnel, 10 inches ; Height of Top above Ground, 6 feet ; Above Sea Level, 300.

Rain Fall at North Sunderland, Northumberland, in the Year, 1868. Communicated by the Rev. F. R. SIMPSON.

Month.	Total Depth.	Greatest Fall in 24 hours.		Days on which .01 or more fell.
	Inches.	Depth.	Date.	
January	1.65	.52	19th	18
February	.81	.17	7th	12
March	1.10	.34	25th	10
April	2.51	.67	7th	14
May	.88	.29	23rd	10
June	.32	.11	21st	7
July	.74	.33	22nd	4
August	3.08	1.19	22nd	12
September	3.98	1.35	19th	17
October	2.62	.70	3rd	13
November	2.03	.42	6th	20
December	3.51	.59	15th	24
Total	23.23	6.68		161

Rain Gauge—Diameter of Funnel, 8 inches ; Height of Top above Ground 1 ft. ; Above Sea Level 60 ft.

General Statements.

The following Members have been elected :—

	1868.
His Grace the Duke of Northumberland	June 25.
Rev. John Elphinston Elliott, Rectory, Whalton	Sept. 24.
R. S. Bolam, Weetwood, Wooler	"
Henry Hunter, Alnwick	"
James Brunton, Broomlands, Kelso	"
Charles Bertram Black, Prior Bank, Melrose	"
John Gordon Smith, M.D., Melrose	"
Rev. J. W. Carlisle, St. Ninian's, Wooler	"
Captain James McPherson, Melrose	"
Major Francis Holland, Alnwick	"
John Atkinson Wilson, Alnwick	"
James Heatley, Alnwick	"
C. H. Cadogan, Alnmouth	"
John C. J. Fenwick, Bolton Hall, Alnwick	"
Rev. Matthew Hepple, Warkworth	"
Hugh Acland, M.D., Regius Professor of Medicine Oxford University	"
Gilbert C. A. Stewart, Melrose	"

CORRESPONDING MEMBERS.

William Shaw, Gunsgreen, Eyemouth	"
John Anderson, Lintlaw-burn, Edrom	"

The INCOME and EXPENDITURE have been :—

	£	s.	d.
Balance from last year ..	23	0	8
Arrears received	14	16	0
Entrance fees	7	0	0
Subscriptions for 1867 ..	35	8	0
Do. 1868 ..	1	16	0
	82 0 8		

EXPENDITURE.

For Printing, &c.	39	16	6
Balance in hand	42	4	2

Places of Meeting for the Year, 1869.

Burnmouth	Thursday, June 6.
Lauder	" June 24.
Castleton, to meet the Dunfries-shire Natural History and Antiquarian Society	" July 29.
Longhoughton	" August 26.
Berwick	" September 30.

ERRATA.

- Page 13, line 29, for "Honckenya" read "Honckeneja."
" 13, " 30, " "Cakili" read "Cakile."
" 41, " 36, " "platunoides" read "platanoides."
" 156, " 39, " "Plate VIII. fig. I." read "Plate XI. fig. 1."
" 157, " 8, " "Plate XI. fig. I." read "Plate VIII. fig. 3."
" 175, " 17, " "will" read "well."
" 408, " 17, " "Drata" read "Draba."

BERWICKSHIRE NATURALISTS' CLUB.

LIST OF MEMBERS. DECEMBER 31, 1868.

	Date of Admission.
1. WILLIAM BAIRD, M.D., F.R.S., &c., British Museum, London	Sept. 22, 1831
2. Robert C. Embleton, Beadnell	Sept. 19, 1832
3. Sir William Jardine, Bart., Jardine Hall, Dumfriesshire	April 16, 1833
4. Rev. Thos. Knight, The Rectory, Ford	July 30, 1834
5. Francis Douglas, M.D., Kelso	Sept. 17, "
6. Rev. Henry Parker, Rector of Ilderton, Alnwick ..	Sept. 21, 1836
7. David Milne Home, F.R.S.E., &c, Paxton House, Ber- wick	May 6, 1840
8. Frederick J. W. Collingwood, Glanton Pyke ..	Dec. 16, "
9. Jonathan Melrose, W.S., Coldstream	Sept. 18, 1841
10. Rev. John Dixon Clark, The Hall, Belford ..	July 26, 1843
11. David Macbeath, Loughton, Essex	Sept. 20, "
12. John Boyd, Cherrytrees, Yetholm	" "
13. James Tait, Edenside, Kelso	" "
14. William Dickson, F.A.S., Alnwick	Oct. 18, "
15. William Brodric, Little Hill, Chudleigh, South Devon	Sept. 3, 1845
16. John Turnbull, 16, Thistle Street, Edinburgh ..	May 3, 1846
17. Rev. George Walker, Belford	June 3, "
18. Ralph Carr, Hedgeley, Alnwick	June 16, 1847
19. Rev. Matthew Burrell, Chatton	Oct. 20, "
20. " George Rooke, Embleton	May 3, 1848
21. Henry Gregson, Lowlyn, Beal	June 25, 1849
22. Rev. Hugh Evans, Scremerston	July 25, "
23. " William Lamb, Ednam, Kelso	Sept. 12, "
24. George Tate, F.G.S., Alnwick	Oct. 18, "
25. The Right Hon. the Earl of Home, Hirsel, Coldstream	May 1, 1850
26. R. Hood, M.D., 5, Salisbury Street, Newington, Edin- burgh	July 24, "
27. Rev Samuel Arnot Fyler, Cornhill	Sept. 18, "
28. " W. Darnell, Bamburgh	May 7, 1851
29. Henry Stephens, Redbraes Cottage, Bonnington, Edin- burgh	Oct. 15, "
30. Francis S. Cahill, M.D., Berwick-upon-Tweed ..	3R
31. W. H. Logan, Berwick-upon-Tweed	
32. John Church, Bell's Hill, Belford	
33. William Grey, East Bolton, Alnwick	
34. W. Smellie Watson, 10, Forth Street, Edinburgh ..	
35. John Craster, Craster Tower, Bilton	
36. Rev. Wm. Rigge, St. John Lee, Hexham	
37. William Dickson, jun., Alnwick	

	Date of Admission.
38. John Turnbull, M.D., Coldstream	June 30, 1852
39. Sir John Majoribanks, Bart., Lees, Coldstream	" "
40. Rev. George Selby Thompson, Acklington	" "
41. George R. Tate, M.D., Royal Artillery	Sept. 8, "
42. William Stevenson, Dunse	Sept. 7, 1853
43. James Wilson, M.D., Berwick	Oct. 12, "
44. William Boyd, Hetton, Belford	" "
45. Charles Stuart, M.D., Chirnside	Aug. 16, 1854
46. Rev. F. R. Simpson, North Sunderland	" "
47. The Ven. Archdeacon Hans Hamilton, Eglington	Oct. 25, "
48. Thomas Sopwith, F.R.S., 43, Cleveland Square, London	May 9, 1855
49. Charles Rea, Doddington, Wooler	June 23, "
50. George Culley, Fowberry Tower, Belford	" "
51. Wm. Majoribanks, Lees, Coldstream	" "
52. Ralph Galilee Huggup, King's Lynn	July 18, "
53. Rev. Charles Thorp, Vicar of Ellingham	Jan. 31, 1856
54. John Church, jun., Bell's Hill, Belford	Oct. 29, "
55. Charles Watson, Dunse	" "
56. Rev. Thomas Leishman, Linton, Berwickshire	" "
57. George Hughes, jun., Middleton Hall, Wooler	" "
58. John Charles Langlands, Old Bewick, Alnwick	June 25, 1857
59. Frederick R. Wilson, Alnwick	" "
60. Dudley-Coutts Majoribanks, London	July 30, "
61. T. Y. Greet, Norham	Oct. 28, "
62. Patrick Thorp Dickson, Alnwick	" "
63. William Sherwin, Keswick	" "
64. Rev. Thomas Procter, Berwick	" "
65. Matthew Culley, Coupland Castle, Wooler	" "
66. John Clay, Berwick	" "
67. Rev. J. W. Dunn, Warkworth	" "
68. " William Cumby, Beadnell	" "
69. " William Procter, Doddington	Oct. 29, "
70. John Marshall, M.D., Chatton Park	June 24, 1858
71. James Robson Scott, M.D., Scotch Belford, Yetholm	" "
72. Rev. J. Walker, Greenlaw	Sept. 22, "
73. John Stuart, LL.D., F.S.A., Scot., Register House, Edinburgh	Oct. 27, "
74. John Wheldon, Paternoster Row, London	" "
75. Middleton Dand, Hauxley, Acklington	June 28, 1859
76. Rev. Aislabie Procter, Alwinton, Morpeth	" "
77. Stephen Sanderson, Berwick	" "
78. James Maidment, 25, Royal Circus, Edinburgh	" "
79. Dennis Embleton, M.D., Newcastle	" "
80. Charles B. Pulleine Bosanquet, Rock	Sept. 29, "
81. Rev. J. S. Green, Vicarage, Wooler	May 31, 1860
82. Robert Douglas, Berwick	June 28, "
83. Robert Graham, Embleton	July 26, "
84. Rev. John Irwin, Berwick	Sept. 13, "
85. John Riddell, Bewick Folly, Alnwick	" "
86. Watson Askew, Paulinsburn	Oct. 11, "
87. Rev. Edward A. Wilkinson, Tüdhoë, Durham	May 30, 1861
88. Robert Clay, M.D., Launceston	" "
89. William Mackenzie, M.D., Kelso	June 27, "
90. J. A. H. Murray, 6, Beaufort Terrace, Peckham Rye, London	" "
91. Charles Douglas, M.D., Kelso	" "
92. James Patterson, Gas Works, Warrington	" "
93. Campbell Swinton, Kimmergham, Dunse	" "

	Date of Admission.
94. Rev. P. G. McDouall, Kirknewton. Wooler ..	July 25, 1861.
95. Thomas Brewis, Eshot, Acklington ..	" "
96. Rev. W. J. Cooley, Rennington, Alnwick ..	" "
97. " Robert Henniker, South Charlton, Chathill ..	" "
98. " William Greenwell, Durham ..	" "
99. John Waite, Dunse ..	Aug. 29, "
100. Richard Hodgson, Carham, Coldstream ..	" "
101. Captain M'Laren, Coldstream ..	" "
102. Sir George Douglas, Bart., Spring Wood, Kelso ..	" "
103. William Cunningham, Coldstream ..	Sept. 26, "
104. Thomas Friar, Grindon Ridge, Coldstream ..	" "
105. William Wightman, Wooler ..	" "
106. Rev. Court Granville, Alnwick ..	" "
107. Thomas Landale, Temple Hall, Coldingham ..	" "
108. James Bowhill, Ayton ..	May 22, 1862
109. Sir J. Y. Simpson, Bart., M.D., Edinburgh ..	June 26, "
110. Thomas G. H. Burnet, Newcastle-on-Tyne ..	" "
111. John Scarth, Cranborne, Windsor ..	" "
112. Septimus Smith, Norham ..	" "
113. John Paxton, Norham ..	" "
114. Robert Weatherhead, Berwick ..	" "
115. John Howison, Architect, Portobello, Edinburgh ..	" "
116. Charles Anderson, Jedburgh ..	" "
117. John Hume, Jedburgh ..	" "
118. Henry R. Hardie, Stoneshiel, Ayton ..	" "
119. J. Scott Dudgeon, The Rocks, East Grinstead ..	July 30, 1857
120. William Elliot, Jedburgh ..	June 25, 1862
121. James Tait, 7, Union Street, Kelso ..	" "
122. Alexander Jeffrey, F.S.A. Scot, Jedburgh ..	" "
123. Archibald Jerdon, High Field, Melrose ..	" "
124. Rev. J. C. Bruce, LL.D., Newcastle-on-Tyne ..	July 31, "
125. John Tate, Barn Hill, Acklington ..	" "
126. Robert Crossman, Chiswick House, Beal ..	" "
127. Rev. J. B. Roberts, Shilbottle ..	" "
128. " Peter Mearns, Coldstream ..	" "
129. W. Watson, White Hall Lane, Buckhirst Hill, Woodford ..	" "
130. A. Brown, M.D., Coldstream ..	" "
131. George Bailes, Scremerston, Berwick ..	" "
132. William Crawford, Dunse ..	Aug. 15, "
133. George Rea, Middleton House, Alnwick ..	Aug. 28, "
134. James Falla, M.D., Jedburgh ..	Sept. 25, "
135. James Cunningham, Coldstream ..	May 28, 1862
136. Rev. Mark Pattison, Rector of Lincoln College, Oxford ..	" "
137. Sir Walter Elliot, K.C.S.I., Wolfelee, Jedburgh ..	June 25, "
138. John Ord, Muirhouse Law ..	" "
139. William Dickson, Hawick ..	" "
140. Thomas Robertson, Alnwick ..	" "
141. Rev. Peter Purvis, Morbottle, Kelso ..	" "
142. Alexander Curle, Melrose ..	" "
143. John Edmund Friar, Grindon Ridge ..	" "
144. Rev. William Stewart, Warkworth ..	" "
145. William Chartres, Newcastle.. ..	" "
146. Francis Russell, Sheriff Substitute, Jedburgh ..	" "
147. William Hilton Dyer Longstaffe, Gateshead ..	" "
148. Robert Middlemas, Alnwick ..	" "
149. Robert Bushy, Alnwick ..	" "
150. James Hardy, Oldcambus, Cockburnspath ..	" "

		Date of Admission.	
151.	Rev. Edward Marrett, Vicar, Lesbury ..	..	July 30, 1863.
152.	Thomas Clutterbuck, Warkworth ..	..	" "
153.	Thomas Tate, Alnwick ...	..	" "
154.	J. Paterson, Wool Market, Berwick ..	..	" "
155.	Rev. Adam Davison, Yetholm ..	..	" "
156.	Lord Henry Ker, Huntley Burn, Melrose ..	..	" "
157.	Robert Brown, Littlehoughton, Chathill ..	..	Sept. 29, "
158.	Rev. James Huie, Wooler ..	..	May 26, 1864.
159.	Rev. John Bigge, Stamfordham ..	..	" "
160.	Edward Allen, Alnwick ..	..	June 30, "
161.	Adam Matheson, Jedburgh ..	..	" "
162.	Rev. Charles J. Eliot, ..	..	July 28, "
163.	Rev. Francis Thompson, St. Giles, Durham ..	..	" "
164.	William Hindmarsh, Lilburn Hill, Alnwick ..	..	" "
165.	Christopher S. Bell, Stanwick, Darlington ..	..	Sept. 29, "
166.	Robert Wilson, M.D., Alnwick ..	..	" "
167.	J. Towlerton Leather, Middleton, Belford ..	..	" "
168.	George Webster, 56, Northumberland Street, Edinburgh ..	..	" "
169.	Ralph Forster, Berwick ..	..	May 25, 1865.
170.	Rev. William Clark King, Vicar, Norham ..	..	" "
171.	Colville Brown, M.D., Berwick ..	..	" "
172.	Rev. James Farquharson, Selkirk ..	..	June 29, "
173.	Henry Richardson, M.D., Berwick ..	..	" "
174.	William Bell, Jedburgh ..	..	" "
175.	Henry Fawcus, M.D., Ford ..	..	" "
176.	Thomas Allan, Berwick ..	..	" "
177.	William Henderson, Fowberry Mains, Belford ..	..	" "
178.	Frederick Roy, younger, Nenthorn, Kelso ..	..	July 27, "
179.	William Campbell, M.D., Dunse ..	..	" "
180.	Rev. George Watson, Hownam ..	..	Aug. 31. "
181.	James Rutherford, Kelso ...	..	" "
182.	William Purvis, Linton Burn-foot ..	..	" "
183.	Sholto Douglas, Hownam Mains ..	..	" "
184.	Robert Fluker, M.D., Berwick ..	..	May 31, 1866.
185.	Robert Walker, M.D., Wooler ..	..	June 28, "
186.	Major Briggs, Langton Tower, Jedburgh ..	..	July 26, "
187.	Robert Rutherford, Paradise, Kelso ..	..	" "
188.	Patrick Johnston, Kennet Side Heads, Coldstream ..	..	" "
189.	Buddle Atkinson, Barmoor Castle, Beal ..	..	" "
190.	James Smail, Galashields ..	..	" "
191.	Rev. Dugald Macalister, Stichell, Kelso ..	..	" "
192.	Rev. Manners Hamilton Graham, Maxton ..	..	Aug. 30, "
193.	Andrew Wilson, Coldingham..	..	Sep. 27, "
194.	J. A. Appleton, F.S.A., Western Hill, Durham ..	..	Sept. 26, 1867
195.	George Markham Tweddell, F.S.A., Stokesley ..	..	" "
196.	Rev. P. McKerron, Kelso ..	..	" "
197.	Alexander Dewar, M.D., Melrose ..	..	" "
198.	William Currie, Lint Hill, Selkirk ..	..	" "
199.	William Blair, M.D., Denholm ..	..	" "
200.	John Lee, Procurator Fiscal, Jedburgh ..	..	" "
201.	Major the Hon. Robert B. Hamilton, Langton, Dunse ..	..	" "
202.	Rev. David Donaldson, Alnwick ..	..	" "
203.	Alex. Hay Borthwick, St. Dunstan's Villa, Melrose ..	..	" "
204.	Rev. George Ormsby, Eglington ..	..	" "
205.	„ J. P. MacMorland, Minto ..	..	" "
206.	His Grace the Duke of Northumberland, Alnwick Castle ..	..	June 25, 1868
207.	Robert S. Bolam, Weetwood, Wooler ..	..	Sept. 25, "

List of Members.

				Date of Admission.
208.	Rev. J. Elphinstone Elliot, Rectory, Whalton	..	Sept. 25, 1868.	
209.	Henry Hunter, Alnwick .. ..	..	" "
210.	James Brunton, Broomlands, Kelso ..	..	" "
211.	Charles Bertram Black, Prior Bank, Melrose	..	" "	
212.	John Gordon Smith, M.D., Melrose ..	..	" "
213.	Rev. J. W. Carlisle, St. Ninian's, Wooler	..	" "	
214.	Captain James Macpherson, Melrose ..	..	" "
215.	Francis Holland, Alnwick .. ..	..	" "
216.	John A. Wilson, Alnwick .. ..	..	" "
217.	James Heatley, Alnwick .. ..	..	" "
218.	Rev. Matthew Hepple, Warkworth ..	..	" "
219.	John C. J. Fenwick, Bolton, Alnwick ..	..	" "
220.	C. H. Cadogan, Alnmouth .. ..	..	" "
221.	Hugh Acland, M.D., Regius Professor of Medicine, Oxford .. ..	..	" "
222.	Gilbert C. A. Stewart, Melrose .. ..	..	" "

HONORARY MEMBERS.

Mrs. Dr. Johnson, Berwick.	Miss Hunter, Spring Hill, Coldstream.
„ Bell, Coldstream.	Lady John Scott, Kirk Bank, Kelso.

CORRESPONDING MEMBERS.

William Shaw, Gunsgreen, Eyemouth ..	..	Sept. 24, 1868
John Anderson, Lintlaw Burn, Edrom ..	..	" "

INDEX.

- Abb's Head, meeting 188, geology of, 221, plants, 231.
Acarus autumnalis, 395.
 Accounts, 109, 194, 294, 272, 477.
 Aitken, A., rainfall at Fallodon, 70.
 Alnwick meeting, 398.
 Alwinton meeting, 381.
 Ancient customs and superstitions, 330.
 Ancrum, meeting 100, caves, 102, history of, 128, 133.
 Antiquities noticed, 99, 102, 113, 114, 115, 137, 186, 188, 195, 196, 285, 289, 375.
 Antimony, 380.
Asplenium viride, 99.
 Ayton meeting, 375.
 Bailes, Geo., sections of strata at Sermerstone, 349, 357.
 Baird, Dr. Wm., obituary of Dr. R. D. Thomson, 133-135.
 Bamburgh meeting, 103.
 Barytes, 380.
 Beadnell meeting, 245.
 Belford meeting, 93.
 Bemersyde, 393.
 Berwick, meetings 2, 184, 242, 374.
Beyrichia Tatei, *nov. sp.*, 88.
 Birds noticed, 58, 181, 232, 306, 341, 370-407, 410, 437, 438, 439, 442.
 Birks, camp at, 272.
 Blown sand, action on rocks, 103.
 Boyd, Wm., Botanical and Zoological notices, 231.
 Brainshaugh Chapel, 12.
Buxbaumia aphylla, 420.
Campylopus paradoxus, *nov. sp.*, 448.
 Catrail, 115.
Candona Tateana, *nov. sp.*, 87.
 Campbell, Dr. Wm., notice of *Caprimulgus Europæus*, 306.
 Camps noticed, 98, 101, 272.
 Chambers, Robt., LL.D., notes on map of Charles I. camp at Birks, 272, 273.
 Cheviots, meeting at 99, Botany of, 179, 181, their physical features, geology, &c., 359-370.
 Church, Wm., obituary of, 338.
 Clay, Patrick, obituary of, 341.
 Cockburnspath meeting, 245.
 Coldingham Priory, 207, derivation of name, 222.
 Cornhill, history of, 344-348, meeting at, 374.
 Collingwood, E. J., rainfall at Lilburn Tower, 182, 240, 292, 358, 477.
 Collingwood, F. J. W., his address, 183-194, notice of *Thalassidroma Bullockii*, 371, rainfall at Glanton Pyke, 92, 182, 240, 292, 358, 476.
Cribellites carbonarius, *nov. sp.*, 71.
Cyphella Curreyi, *nov. sp.*, 41.
 Denholm, meeting, 298; history of, 307-325; natural history of, 326-330.
 Douglas, Francis, M.D., his address, 295-305.
 Douglas, Robert, fisheries on the Tweed, 67-70.
 Douglasses of Cavers, 311-315.
 Duncan, Rev. James, notice of, 322-324.
 Dunglass Old Church, 246.
 Dunn, Rev. J. W., on Warkworth, 42-57, 412-420.
 Dunse meetings, 105, 299.
 Dunsdale meeting, 301.
 Earlston, meeting, 244; history of, 261-269; geology of, 287-288.
Echiurus neglectus, 96.
 Eglingham, meeting, 248; geology of, 283-287.
 Eildon hills, geology of, 4-6.
Estheria striata, var. *Tateana*, *nov. var.* p. 85.
 Elliot, Sir Walter, on Denholm and its vicinity, 307-325; his address at Alnwick, 420-422.

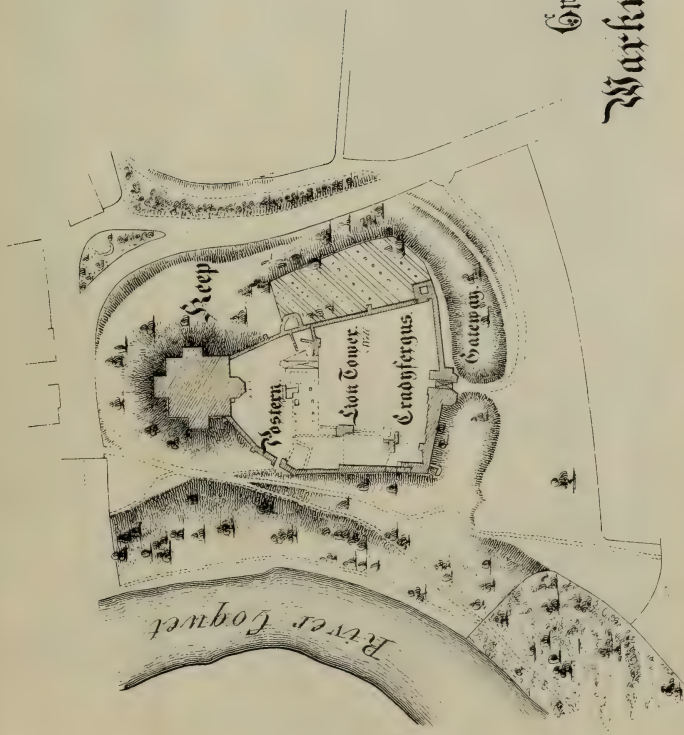
- Elliots of Minto, 315, 316.
 Embleton, R. C., on *Syrphaptes Paradoxus*, 58; *Miscellanea Zoologica et Botanica*, 58, 59, 120, 219, 220, 341-344, 406-408; obituary notices, 336-341.
 Entomostruca, fossil, 83-89.
 Entomological notices, 4, 17, 89, 120, 136, 234, 320, 329, 341, 407, 437.
 Eyemouth, meeting 375; geology of, 379, 380; Fort account of, 421-426.
 Falco rufipes, 439.
 Farne Islands, geology of, 288, 289.
 Fisheries on the Tweed, 67-70.
 Fossils, 9, 19, 71, 83, 106, 187, 233, 244, 284, 288, 326.
 Fungi, 23, 270, 350, 411.
 Fyler, Rev. S. A., history of Cornhill, 344-348.
 Geological notices, 4-7, 16, 18, 19, 71-74, 83-89, 95, 96, 97, 103, 104, 107, 108, 116, 120, 121-128, 185, 189, 221, 224, 231, 236, 240, 283, 282, 326, 349-357, 359-370, 379, 380.
 Glaciated rocks, 95, 96, 189, 212, 236-240, 288, 289, 372.
 Greenlaw, meeting 96; history of, 110-120.
 Greenwell, Rev. Wm., on Ancient British Tumuli opened in Northumberland, 195-205.
 Greet, T. Y., on Ancient Relics found near Norham, 289-221.
 Hypnum mulcens, *nov. sp.*, 472.
 Haritz Dike, 114.
 Hardy, James, Entomological, Botanical, and Zoological notices, 89, 135-137, 181, 182, 232-236, 282; plants new to Berwickshire and their history, 274-281; his address, 373-406; on Eyemouth Fort, 421-426; Mosses of the Borders, 443.
 Herony, at Swindean, 220; at Chillingham, 221.
 Holy Island meeting, 301.
 Home, Earl, anecdote of a Swallow, 442.
 Home, D. Milne, geological observations on Abb's Head, 221.
 Home, Robert, obituary of, 343, 341.
 Hood, Dr. Robert, on the name of Coldingham, 222.
 Howick, geology of, 18, 19.
 Hownam, meeting 190; terraces, 190.
 Hunter, Miss, notice of *Morchella semilibera*, 359.
 Hymenophyllum Tunbridgensis, 232.
 Indian Antiquities, 421, 422.
 Jeffrey, Alex., on Ancrum, 128-133.
 Jerdon, Arch., list of Fungi near Jedburgh 23-41, 270, 271; additions to the Mosses of the Borders, 206, 207, 271; corrections of the same, 410; Fungi of the Borders, 411; botanical notes, 232, 371; his address, 241-248.
 Jones, Professor Rupert, description of the Fossil Entomostraca of the Borders, 83-89.
 Jongs, 198.
 Kaims noticed, 97, 107, 108, 117-120, 124-128, 224-231.
 Kelso meeting, 296.
 Langlands, J. C., on the History and Natural History of Old Bewick, 239-261.
 Leishman, Rev. Thos., illustrations of Ancient Customs and Superstitions.
 Linton Loch, 191.
 Leyden, John, M.D., notice, of 316-322.
 Longhoughton, meeting 17, notice of the vill, manor, church and registers, 74-82.
 Mearns, Rev. P., on Wark Castle, 61-66; on an ancient bridge at Coldstream, 90-91; on a kaim at Wark, 224-231.
Medicago maculata, &c., 391, 421.
 Melrose meeting, 309.
 Members elected, 3, 10, 13, 17, 94, 99, 105, 185, 187, 190, 192, 294, 297, 374, 375, 380, 447; list of, 479.
 Meteorite, at Newstead, 9.
 Mosses noticed, 198, 206, 232, 271, 379, 385, 410, 443-475.
 Murray, J. A. H., on the Natural History of Denholm, 327-330.
 Newstead, 8.
 Norham, meeting 185, the castle noticed, 186.
 Old Bewick, meeting 242; its History and Natural History, 242-261.
Osmunda regalis, 438.
 Peat, 98.
 Percy relics at Cavers, 298.
 Plants noticed, 4, 13, 17, 20, 23, 59, 120, 135, 179, 187, 206, 231, 232, 234, 243, 244, 246, 260, 270, 273, 274, 291, 300, 302, 303, 327, 330, 340, 341, 359, 369, 371, 377-379, 384, 388, 390, 393, 396, 408, 421, 437, 443.
Psalliota Jerdoni, *nov. sp.*, 41.
Peronospora sordida, *nov. sp.*, 41.
 Rainfall, 70, 92, 182, 240, 292, 293, 358, 476.

- Roman remains, 8.
 Rothbury meeting, 192.
 St. Boswell's. Newtown meeting, 3.
 St. Ebba's Monastery, 207.
 Saxon Cross at Coldingham, 188
 Scott, Dr. J. R., notice of Swindean Heronry, 220.
 Sculptured rocks of Northumberland and the Eastern Borders, 137-178.
 Selby, Captain George, obituary of, 338-340.
 ———, J. Prideaux, obituary of, 336-338.
 Squirrel (*Sciurus vulgaris*), notice of 440-442.
 Simpson, Rev. F. R., rainfall at North Sunderland, 293-358, 476. Zoological Jottings, 370, 371, 437, 438.
 Stevenson, Wm., on a cist at Dunse, 60; his address. 93-109; on Primary Quartz in the South of Scotland, 121-123; on Bedshiel Kaim, 124-128.
Stigmaria ficoides in Torbane Coal, 9.
 Stuart, Dr. Charles, on *Picus Major*, 409, 410; notes on birds, 442.
 Stuart, Dr. John, on St. Ebba's Monastery and Coldingham Priory, 207-219.
 Swallow, anecdote of, 442.
Sphæria Jerdoni, *nov. sp.*, 41.
S. stylophora, *nov. sp.*, 41.
S. clepharodes, *nov. sp.*, 41.
 Tait, James, on Earlston, 261-269.
 Tate, George, Geology of the Eildons, 4-6; of Howick, 18, 19; description of *Cribellites carbonarius*, a Sea-star from the Mountain Limestone of Northumberland, 71-74; on the vill, manor, church, and registers of Longhoughton, 74-82; notes on strata connected with fossil Entomostraca, 83-89; the Ancient British Sculptured Rocks of Northumberland and the Borders, 137-179; botanical notices, 232, 438; records of Glaciated Rocks on the Eastern Borders. 236-240, 288, 289, 372; notes, Geological and Zoological, 283-289, 357, 372; the Cheviots, their range, physical features, geology, and botanical peculiarities, 359-370; Geology of Eyemouth, 379, 380; Harbottle Castle, 427-437; on *Falco rufipes*, the Orange-legged Hobby, 432; on the Squirrel, 440-442
 Tate, Geo. R., M.D., botany of the Cheviots, 179-181; botanical notes, 273.
 Tate, Thomas, on the Heronry in Chillingham Park, 228.
 Terraces at Hownam, 190.
Tortula maritima, *nov. sp.*, 473.
 Thomson, Rev. Dr. D., F.R.S., obituary of, 133-135.
 Tumuli opened, 195-205.
 Turnbull, John, his address, 1-22.
 Walker, Rev. John, on Greenlaw, 110-120.
 Wark Castle, 61-66.
 Warkworth, meeting, 11; the castle, hermitage, and church, 42-57; notices of the ancient vill 412-420.
 Zoological notices, 58, 120, 136, 181, 219, 232, 282, 306, 341, 343, 370, 372, 473-442.



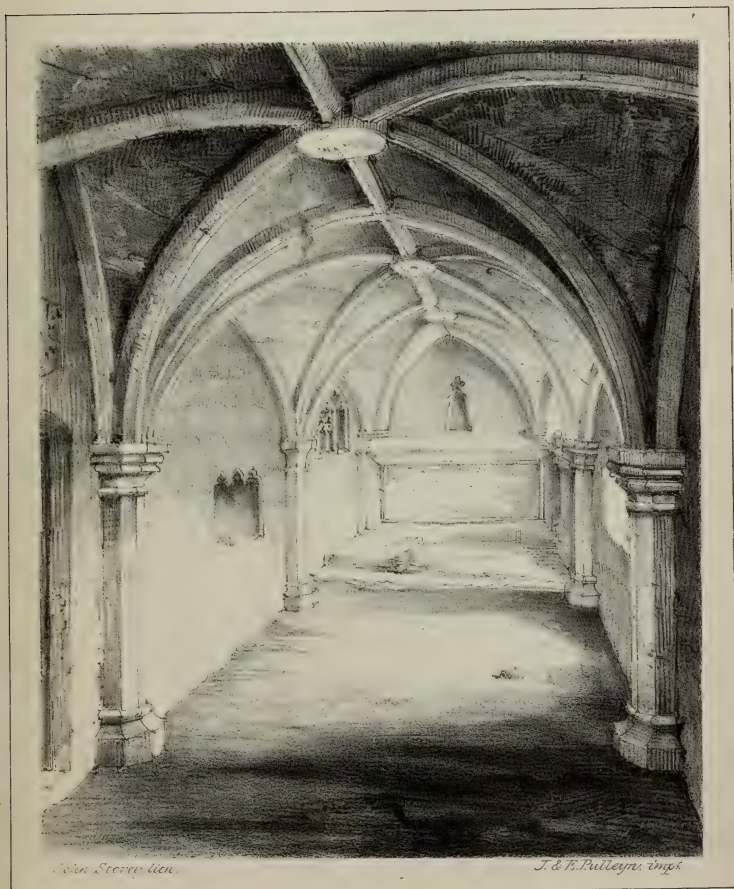
Ground Plan of Warkeworth Castle.

J. & E. Doolley, Engrs.



J. Stacey Lith.





WARKWORTH HERMITAGE,
INTERIOR OF CHAPEL.





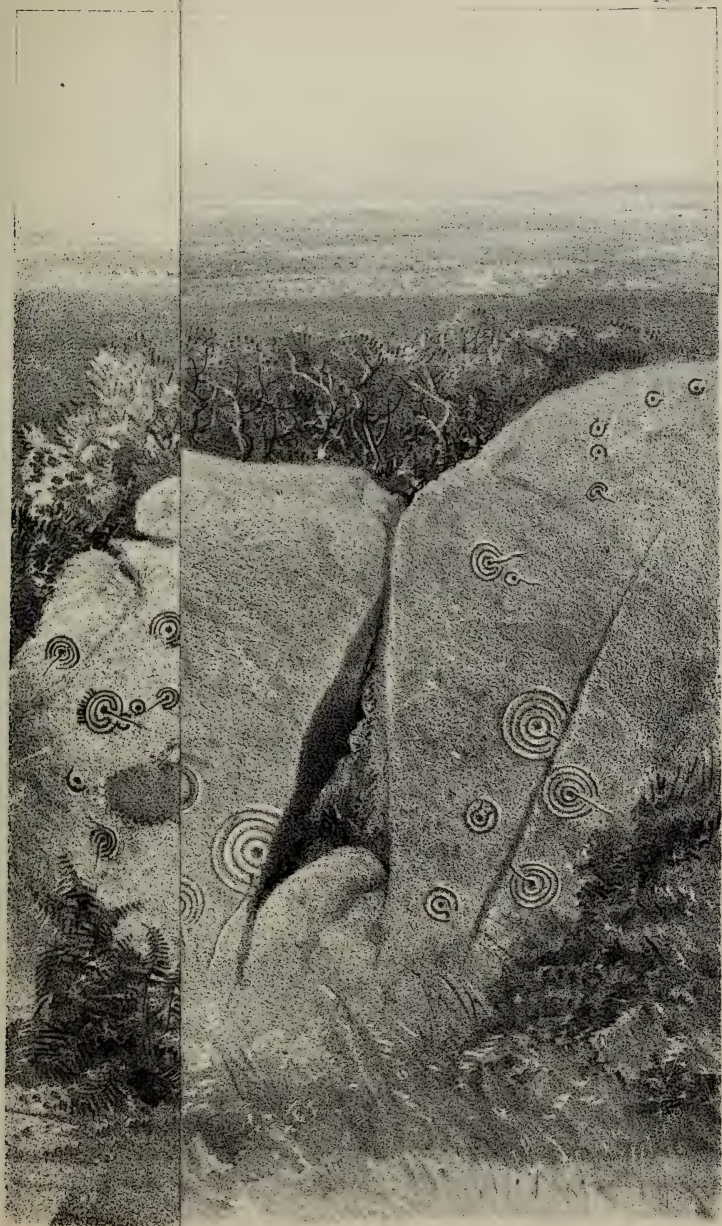
John Storey, del.

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LONGHOUGHTON CHURCH.

INTERIOR LOOKING EAST.





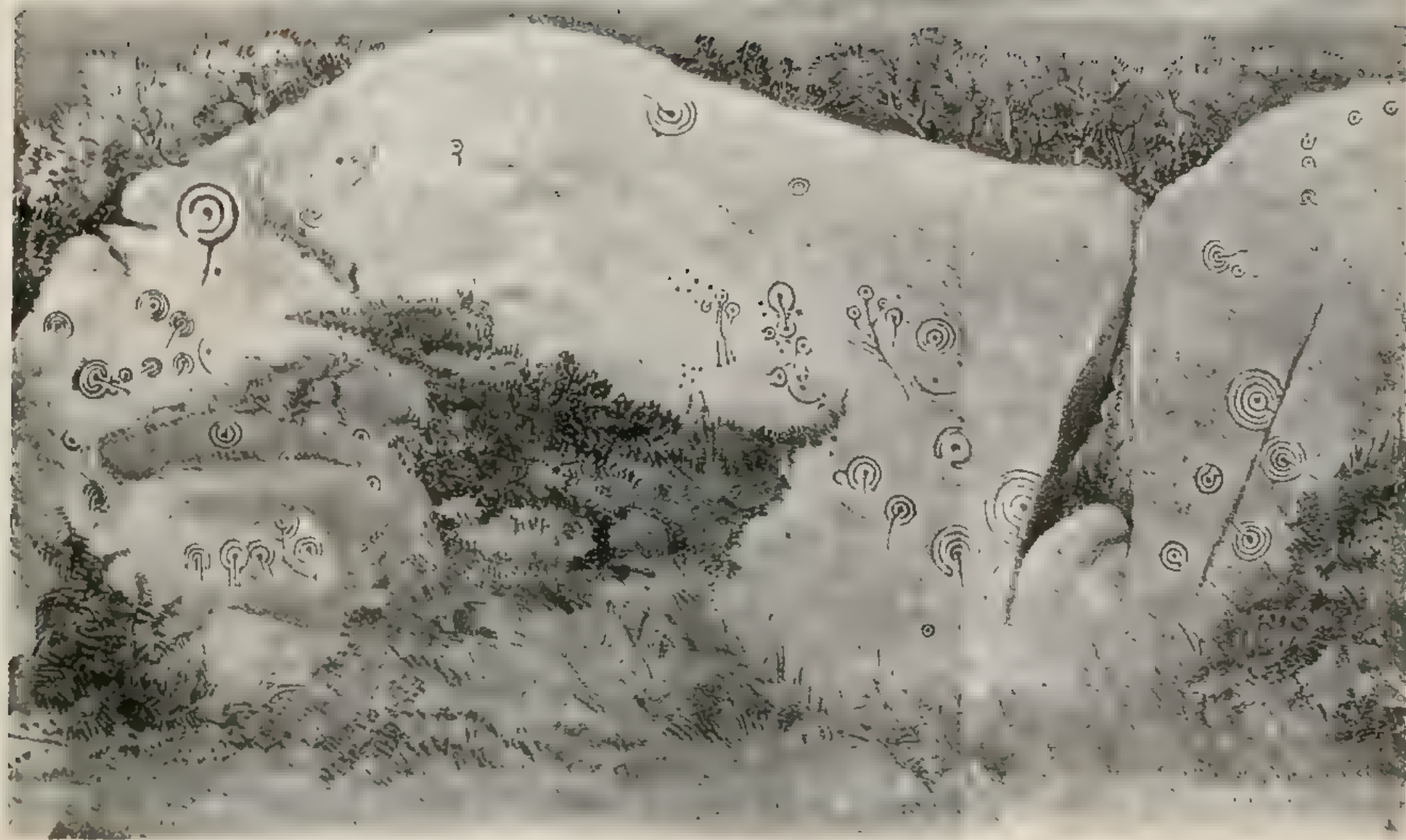


PLATE II

Fig. 1

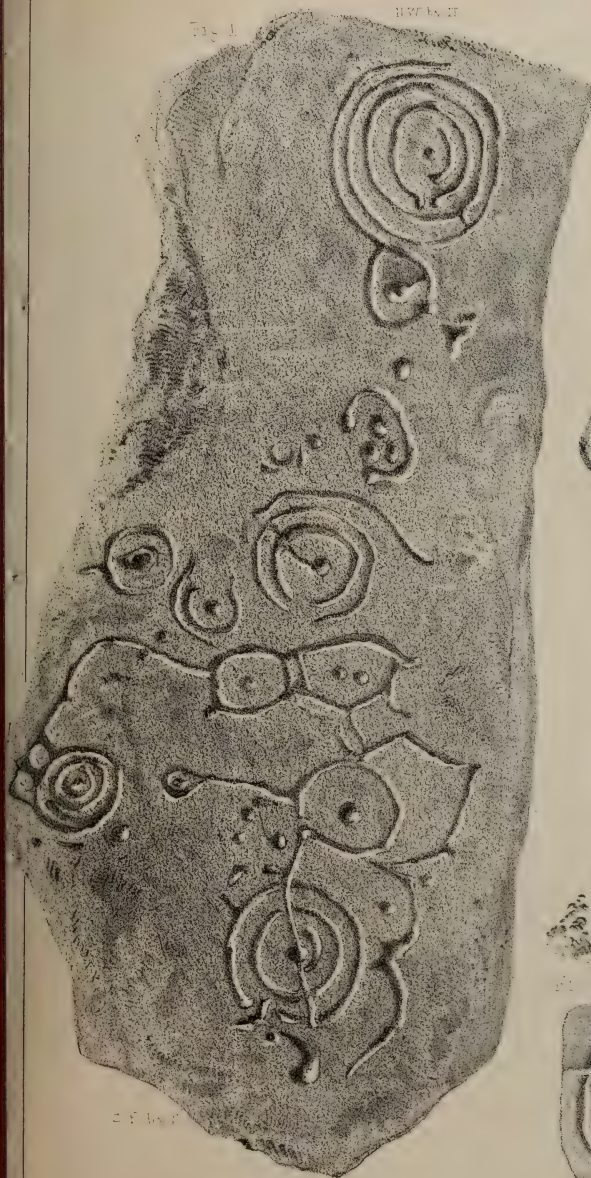


Fig. 2

Fig. 3



Fig. 4

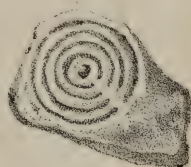
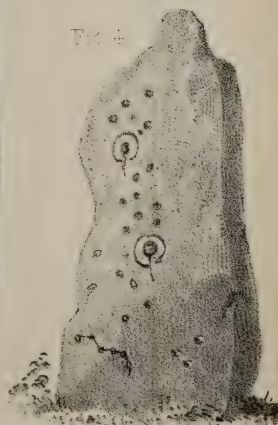
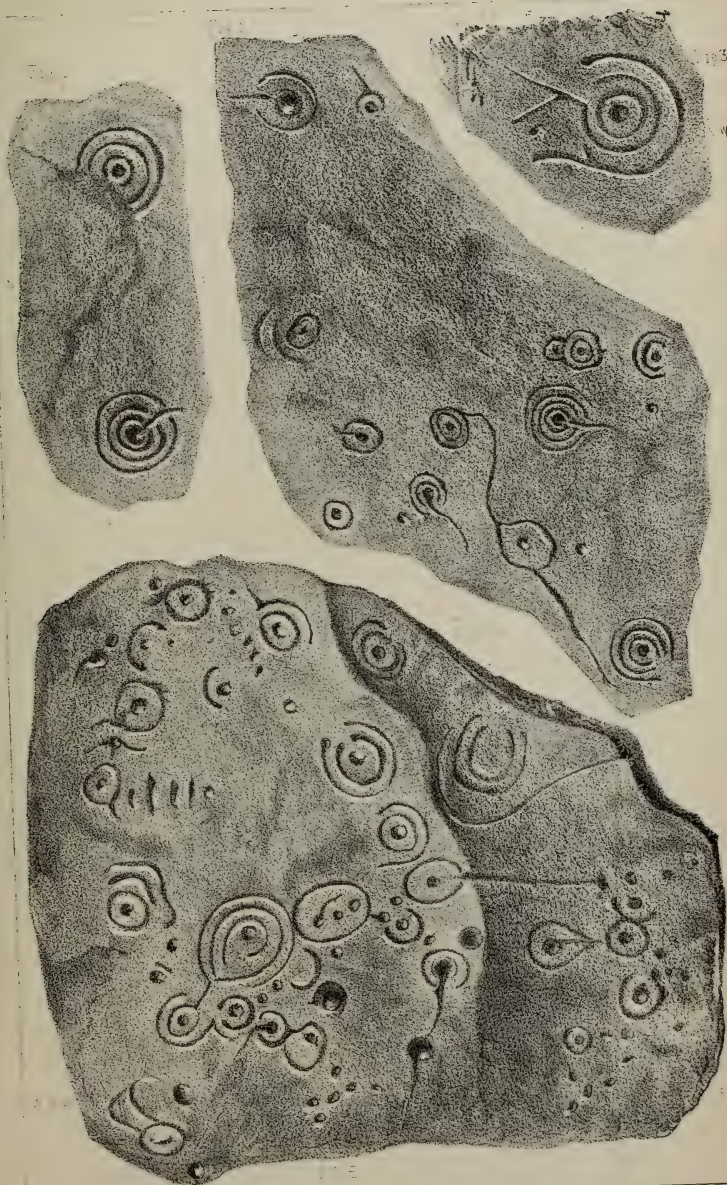


Fig. 5









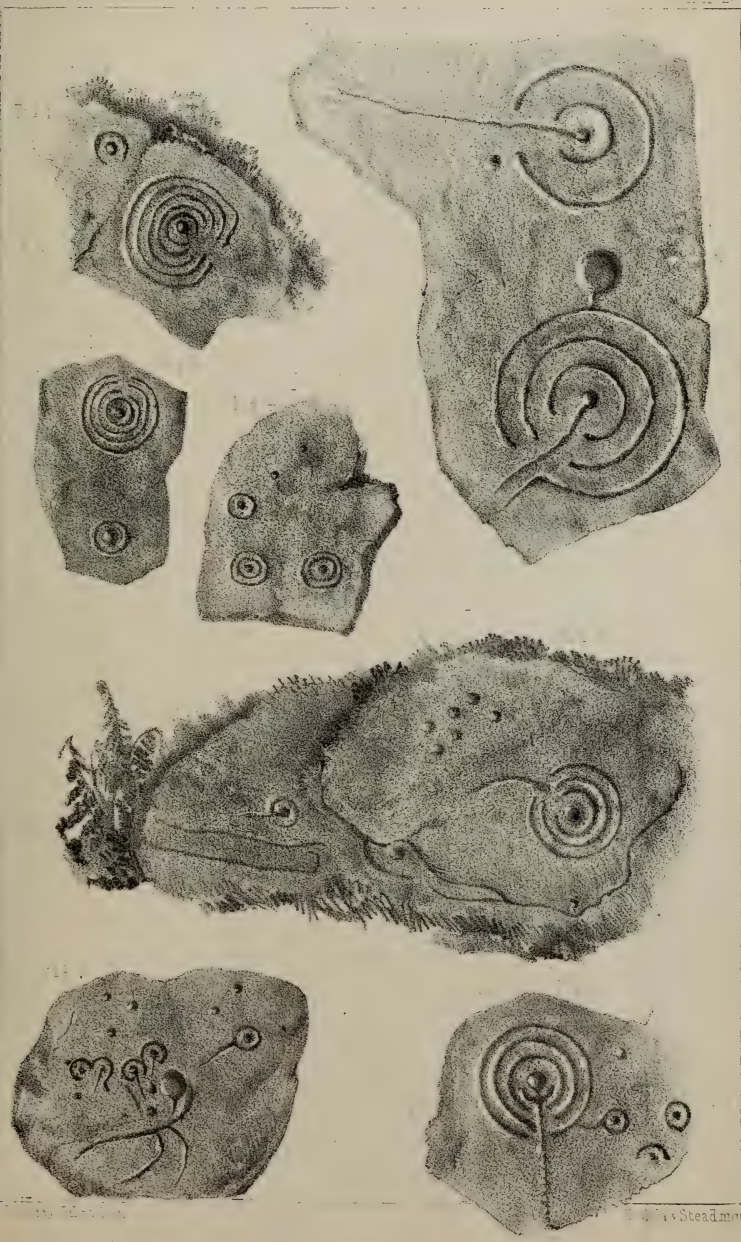








Fig 2



Fig 3

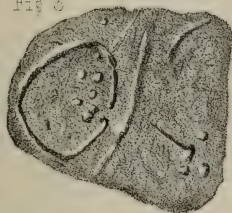
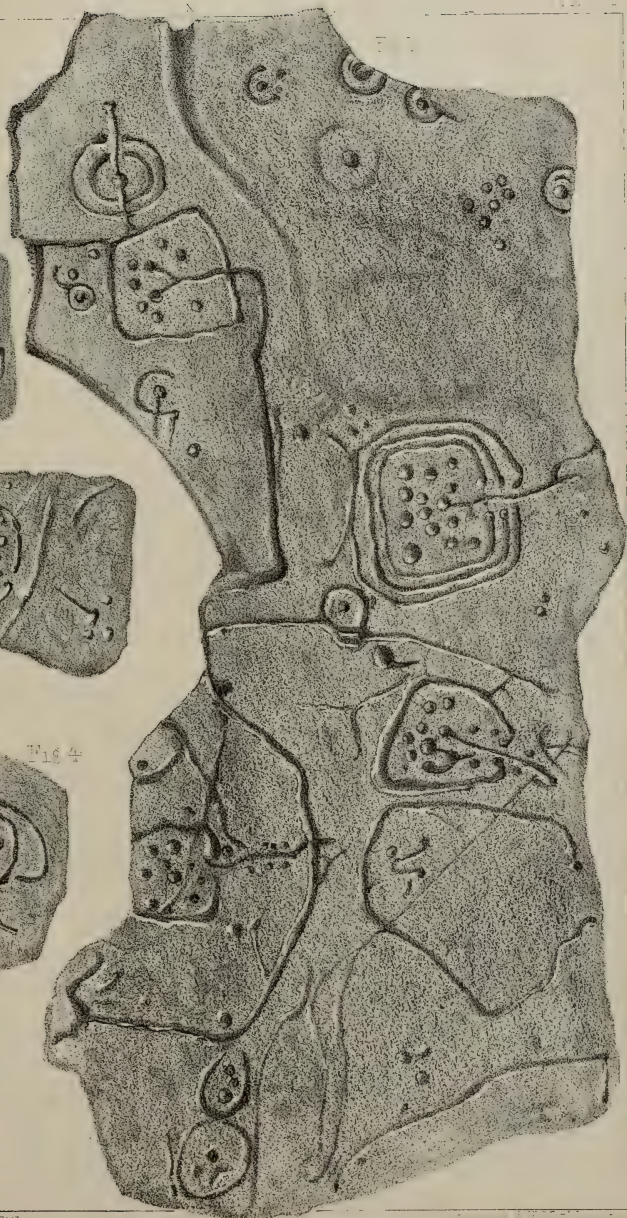
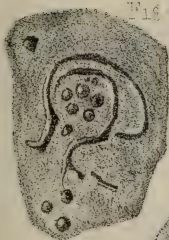


Fig 4





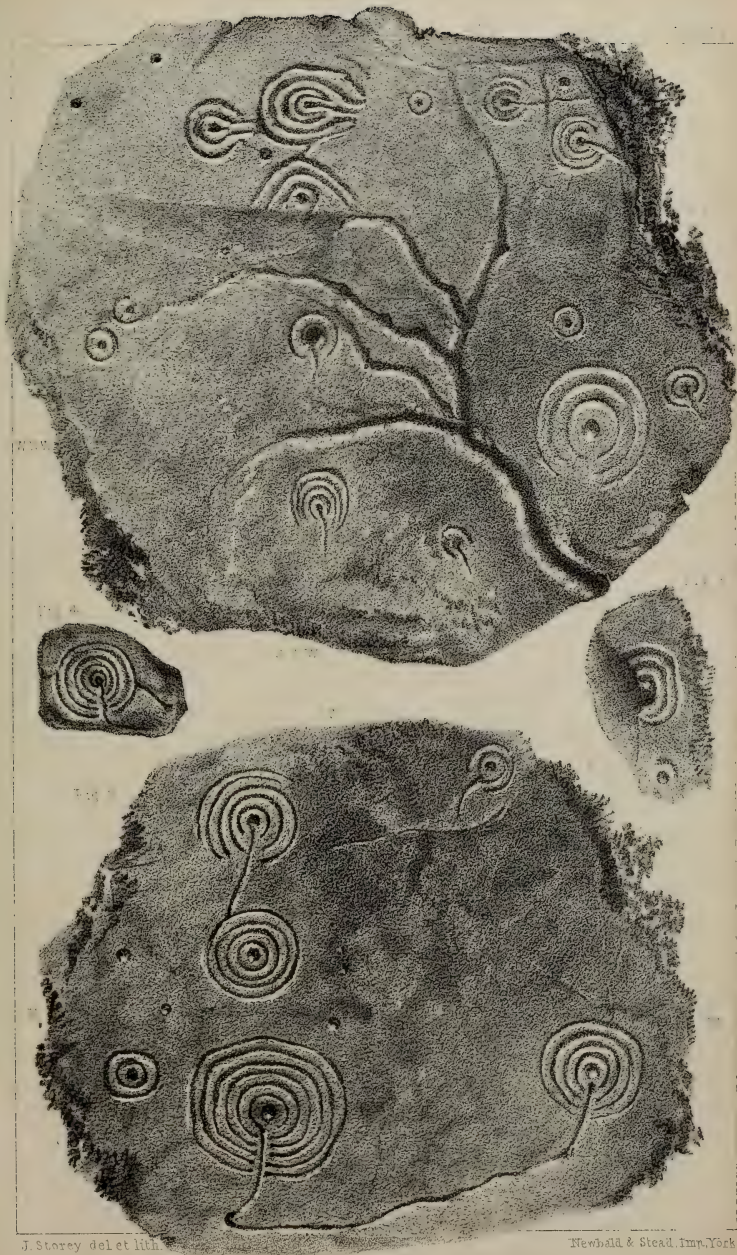






Fig. 1



Fig. 2



Fig. 3

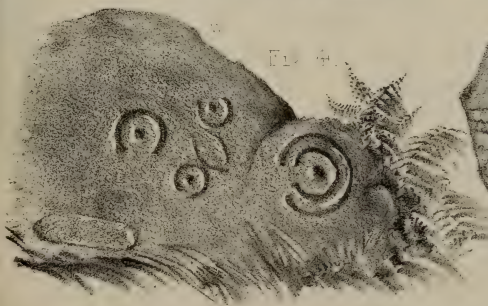


Fig. 4





FIG. 1



FIG. 2

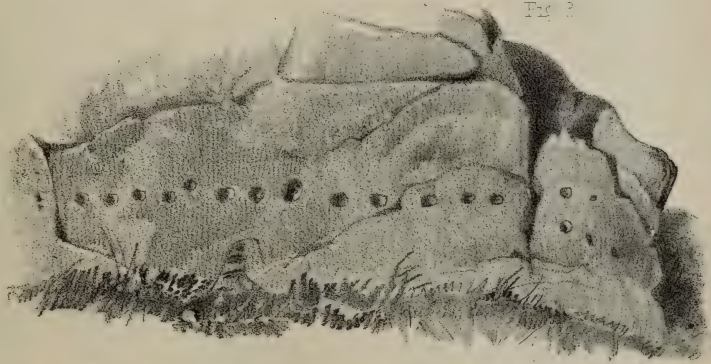


FIG. 3

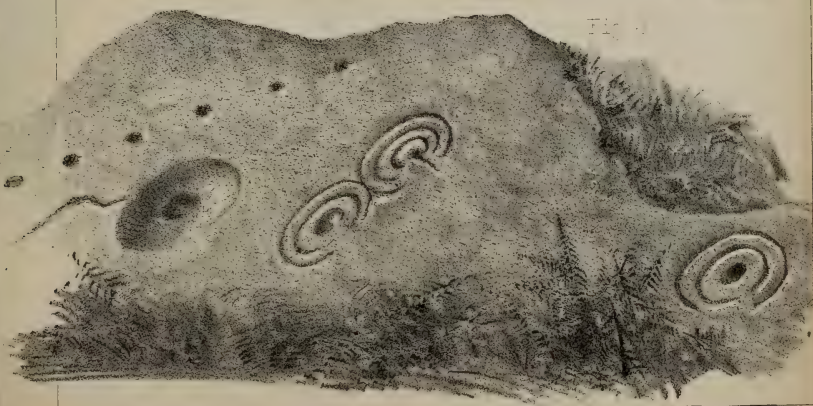




Fig. 1

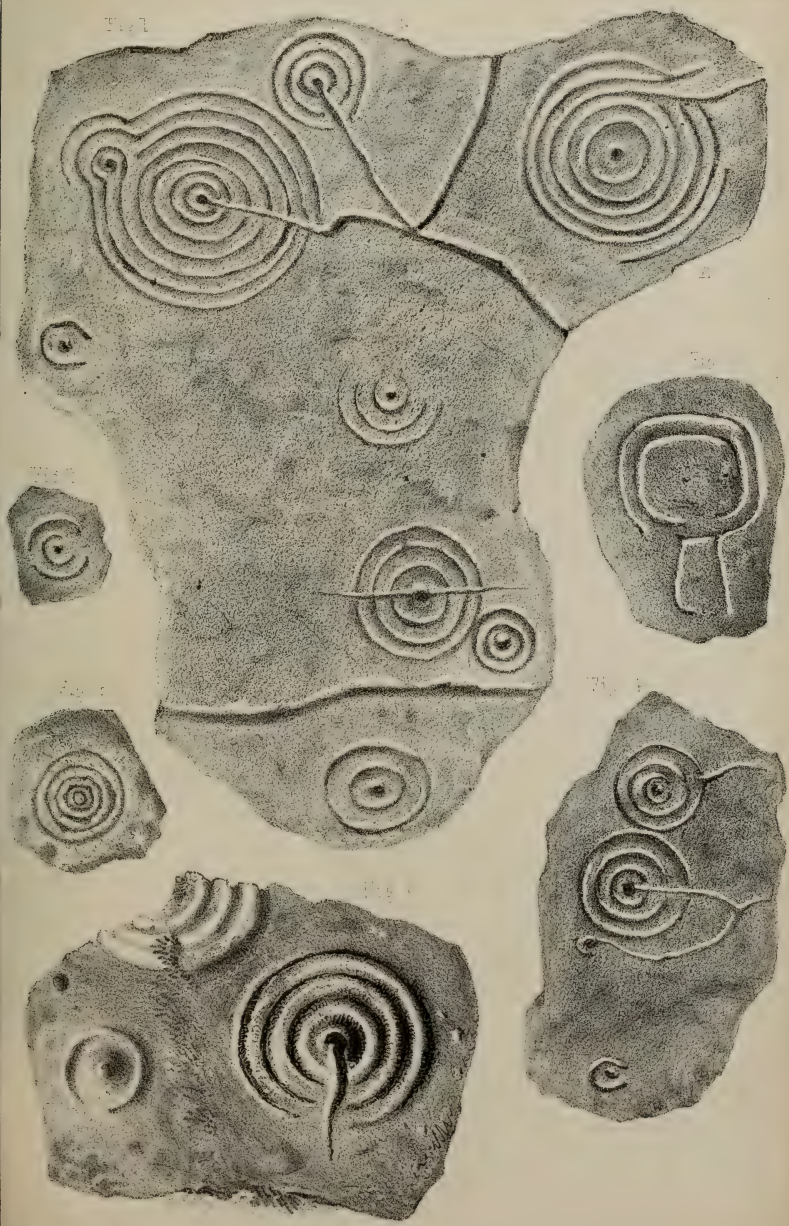


Fig. 2

Fig. 3

Fig. 4



Fig. 1

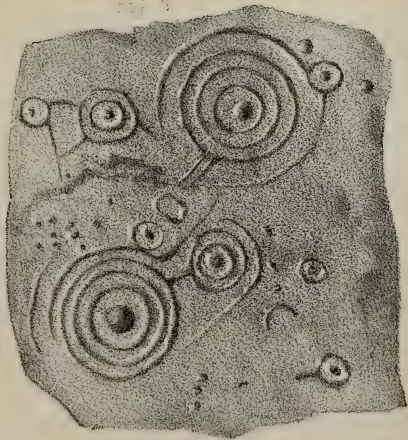
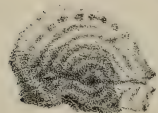
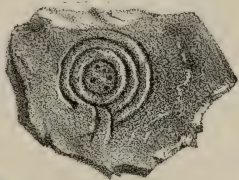


Fig. 2

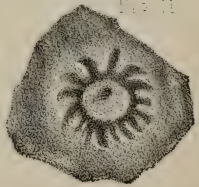
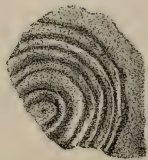




PLATE XII.

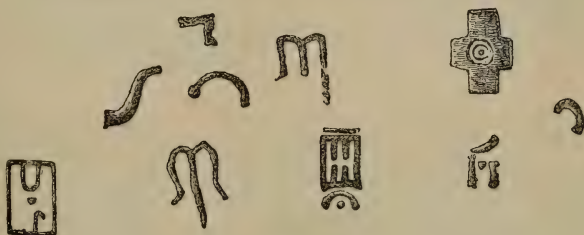
1. Inscriptions on Rock west of a Barrow, near Weetwood.



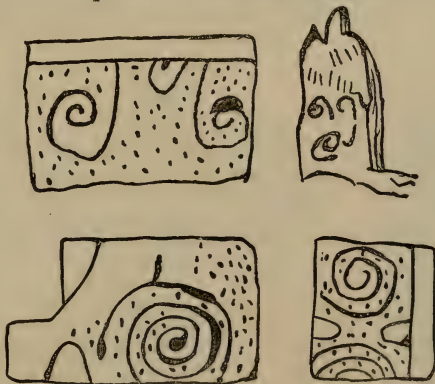
2. Inscriptions on Sculptured Rock, Cuddy's Cove.



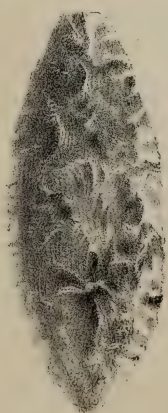
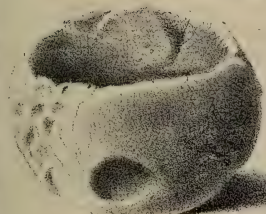
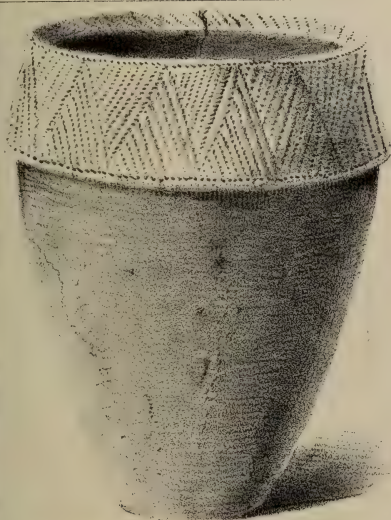
3. Inscriptions on Rock, perpendicular face of Cuddy's Cove.



4. Sculptures on Rock Temples, Malta.









A MAP OF HIS CAMP THE NO

PART

OF

*The Glorious Standard of our Gracious King
whence streams of peace to Byall Subjects spring
But Stos of Ruine and Sterile War to them
Next comes that Peace more is his Diadem.*

Ourde
The way From Burwicke to His Ma^{ties} Campe or Leaguer



This Table explains the order
and disposition of the Campe.

- A The Kings Tents
- B The Lords Tents
- C The Kings Gards
- D The Generals Tents
- E The Leveten^t Gen^{ls} Tents
- F The Generall's Regiment
- G The Leveten^t Gen^l Regim^t
- H Earle Newports Regiment
- I Serjent Major Gen^l Regim^t
- K St^r Henry Vanes Regiment
- L St^r William Savills Regiment
- M St^r John Huthams Regiment
- N St^r Symon Harcourts Regim^t
- O Collonell Bretts Regiment
- P St^r Thomas Mortons Regim^t
- Q St^r Pennymans Regt
- R St^r Thomas Mettams Regm^t
- S The Kings Stables
- T The Lords Stables

Small 1688 1689

OF KING CHARLES PE OR LEAGVER IN TH. AN. DOM.^N 1639

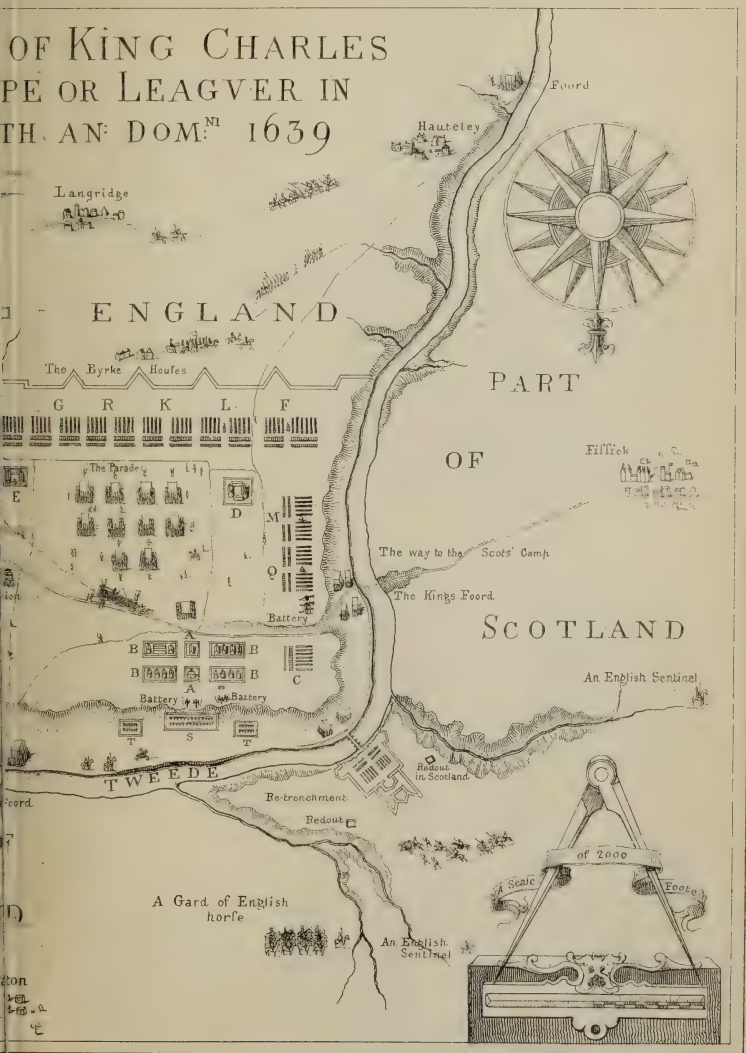






Fig. 1.
Iron sword
 $\frac{2}{6}$ size.

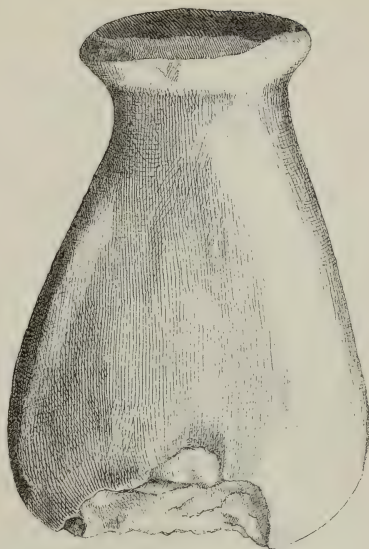


Fig. 2.
Stone cell (half size)

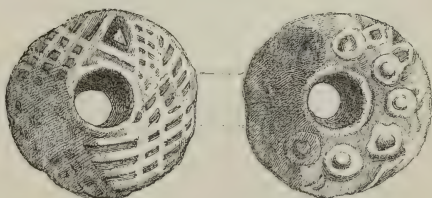


Fig. 3.
Leaden Relics, full size

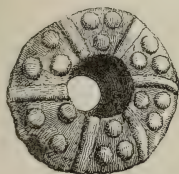


Fig. 5.

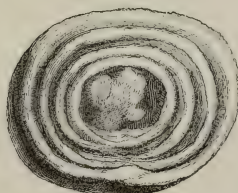


Fig. 6.

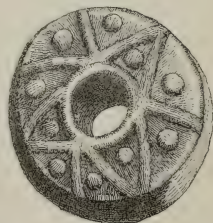


Fig. 4.



